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AGE IS JUST A NUMBER: THE LIVED EXPERIENCES OF INSTITUTIONALIZED ELDERLY AMID COVID-19 PANDEMIC

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ABSTRACT

The research sought to explore the lived experiences of the institutionalized elderly during this COVID-19 Pandemic. The study utilized a qualitative research design and specifically employed an Interpretative Phenomenological Analysis. It conducted a semi-structured interview with eight (8) respondents as provided by the institution, however, only six (6) idiographic illustrations have been considered for this research study. The findings of the study have revealed three (3) superordinate themes with three (3) subordinate themes which were classified based on the interconnected themes that were found in the analysis of the transcripts. To conclude, the study revealed that institutionalization amid the pandemic,2 has made them think that they are a liability, physically inadequate, and conditionally accepted. This sudden life transition made them feel the pain of not mattering, a longing for freedom, and a high sense of nostalgia. Consequently, despite their negative thoughts and feelings towards institutionalization, they still choose to rise above the challenges by choosing to cope positively. Instead of feeling lonely, they connect with their non-familial relationship, embrace life for what it is, and strengthen their faith in God. As such, the study recommends that it is imperative to create strategic planning to cater to the geriatric population's diverse and progressing needs.

Keywords: *geriatric population, lived experiences, institutionalized elderly, Covid-19 pandemic*

INTRODUCTION

The phenomenon of aging in the Filipino context is seen through the elders' life experiences, perception of aging, life satisfaction, adaptation, and sense of belongingness (Pagdonsolan, Parel, Parial, Pastor, Peret Ivan & Perez, 2007; Mallari, 2011; Cajayon, et al., 2017; Badana, & Andel, 2018; Salvador, & Alqahtani, 2019). Due to the dignity and maturation that come with age, elderly Filipinos approach this period positively despite a decline in their physical, mental, and other functions (Badana & Andel, 2018). However, a number also face prejudice as they are frequently characterized as liabilities, inept, and helpless (Salvador & Alqahtani, 2019). Statistically speaking, Pambid, Vicente, and Noroña (2021) indicated that at present, the Philippines' aging bracket just like the other countries around the world is numerically growing. Although the country is still considered a young population, as it begins to age, diverse challenges and societal demands concerning elderly support and protection are becoming more visible (Cruz, 2019).

As the Philippines will exceed ten (10) million older adults for the first time at the height of the pandemic, it unswervingly calls for an intensified petition for the elderly's support and health assistance against the risks of the COVID-19 pandemic (POPCOM, 2021). The emerging cases of the COVID-19 outbreak have instigated enduring effects on people across ages in the country (Department of Health, 2021). Globally, recent studies have shown that the most affected individuals by this fatal phenomenon are the elderly, as they are considered the most vulnerable group nowadays (Al-Zahrani, 2020; Vahia, Jeste & Reynolds, 2020; Bundy, H., Lee, H., Sturkey, K. & Caprio, A. 2021; De Pue, Gillebert, Dierckx, Vanderhasselt, Raedt, & Bussche, 2021). The susceptibility of this sector is at stake due to their immunocompromised state, old age, frailty, and comorbidities (Dhama et al., 2020; HelpAge International, 2020; Hubbard, Maier, Hilmer, Naganathan, Etherton- Beer & Rockwood, 2020; Seale et al., 2020). Consequently, the pandemic elicits profound adverse emotional and psychosocial impacts on the geriatric population such as distress, loneliness, anxiety, untold fear, violence, and suffering that can lead to reduced well-being (Chee, 2020; Dubey et al., 2020; Lima et al., 2020; HelpAge International, 2020; Brown, Mossabir, Harrison, Brundle, Smith & Clegg, 2021; Radwan, Radwan & Radwan, 2021). In addition, challenges like activity restrictions, loss of companionship, access to health services, disrupted wellness routines and delayed healthcare visits are also being experienced by older adults during this unprecedented time (Heid, Cartwright, Wilson-Genderson & Pruchno, 2020; Help Age International, 2020; Scott, Yun & Qualls, 2021).

To date, there is a paucity of research studies concerning the Filipino geriatric population as the topic of aging in the Philippines is still young and under-developed

(Villegas, 2014; Badana & Andel, 2018; Carandang, Asis, Shibanuma, Kiriya, Murayama & Jimba, 2019). It was only through the recent establishment of the Institute of Aging by the University of the Philippines- Manila that this area of study has shed light on research interests (Badana & Andel, 2018). Correspondingly, as the Philippines faced the weight of the COVID-19 outbreak, it is being emphasized the need to provide scientific, evidence-based, and personalized care to the geriatric population, and because of that, researchers in this field globally expressed deep concern about the lack of preparedness for emergencies like COVID-19, as well as the public's impression of the virus as a problem affecting the elderly in care institutions (Dhama et al., 2020). This is significant to note since mental health is seen as a critical component of public health in this population, yet few tangible steps have been taken to address this issue (Lebrasseur, et al., 2021). Empirical research, both quantitative and qualitative designs, have shown the importance of addressing the needs of the geriatric community. As older people approach this aging phenomenon, it is crucial to understand their lived experiences, well-being, and coping mechanisms (Duner & Nordstrom, 2005; Lloyd-Williams, et al., 2007; Cooper & Zaman, 2014). Although older Filipinos are rarely institutionalized in their culture, the number of abandoned cases within this group has recently increased (de Guzman, et al., 2012). To espouse, there are studies on elderly institutionalization among Filipinos that highlight the importance and necessity of creating a community that can give way for more connections to achieve a better quality of life and a happier outlook on life (de Guzman, et al., 2012; Runcan, 2012; Mohammad, Dom & Ahmad, 2016). Elderly institutionalization has a negative impact, that's why, to achieve a greater quality of life and a more positive attitude towards life, it's important to emphasize the need for building a community that allows for more engagement to meet the changing needs of our elderly people (Runcan, 2012; Adriano & Dajang, 2013; Mohammad, Dom & Ahmad, 2016). This argument backs up the claim of several researchers that maintaining social support system is very critical as seen in the lived experiences of older adults (de Guzman, et al., 2012; Valdez, Angeles, Pareja-Corpuz & Hernandez, 2013; Dante, 2015; Wijngaarden, et al., 2015; Cajayon, et al., 2017; Salvador & Alqahtani, 2019). However, it is important to note that the lived experiences of the geriatric community vary for each person as each experience is shaped by personal and cultural engagement.

In this regard, the study delved into the lived experiences of the geriatric community, in the context of institutionalized elderly amid the COVID-19 pandemic. The main objective of the study is to explore the lived experiences of the geriatric community, particularly those who are living in an institution during this COVID-19 Pandemic. Specifically, it sought to answer the question*, "What are the lived experiences of the geriatric community amid the COVID-19 pandemic?* "As previously noted, only a few research on the Filipino geriatric population have been undertaken because the area of study when it comes to aging is still developing; this is also true in the case of the country's institutionalized

elderly. The purpose of this study is to uncover their way of meaning-making patterns that have shaped their stay in the institution. In essence, this study is deemed to be significant in policy-making due to the susceptibility of this population to COVID-19. By highlighting the lived experiences of the institutionalized elderly, the findings of the study can help and serve in developing meaningful program intervention efforts as points of action during the pandemic and beyond.

Research Questions

The main objective of the study is to explore the lived experiences of the geriatric community, particularly those who are living in an institution during this COVID-19 Pandemic. Specifically, it sought to answer the question*, "What are the lived experiences of the geriatric community amid the COVID-19 pandemic?"*

METHODOLOGY

Research Design

The study utilized a qualitative research design. Qualitative research explores the quality of relationships, activities, or situations as it emphasizes a very detailed description of what is going on in a specific subject matter (Fraenkel, Wallen & Hyun, 2012). To further understand the experiences of the institutionalized elderly during this pandemic, an interpretative phenomenological analysis (IPA) was employed. This theoretical approach has allowed the researcher to uncover meaning-making patterns in the elderly's thoughts, feelings, and actions that have shaped their stay in the institution. In this sense, the basic tenets of *phenomenology*, *hermeneutics*, and *idiography* as the theoretical orientations of IPA were used throughout the research process. To undertake this, the researcher collected and interpreted data through in-depth interviews with the belief that there is a similarity to how each person views and construes their common experiences.

Research Locale

To facilitate, the study was carried out in Bahay Kanlungan- Tahanan ng mga Lolo at Lola in Barangay Maysan, Valenzuela City. Bahay Kanlungan is an institution for elderly people established by The Local Governing Unit (LGU) of Valenzuela City. This institution is being built during the weight of COVID-19 to give shelter to the homeless elderly of the City of Valenzuela. This institution was established in the year 2021 as part of the 152nd birth anniversary of Dr. Pio A. Valenzuela.

Research Participants

Name (Pseudonym)	Gender	Age	Year Admitted	Medical Diagnosis
Abuela	Female	70 y/o	2021	Hypertension Stage I Type II Diabetes
Gramps	Male	62 y/o	2018	Congestive Heart Failure Benign Prostatic Hyperplasia
Granny Pie	Female	82 y/o	2022	Hypertension Stage I Type II Diabetes
Lala	Female	67 y/o	2020	Hypertension Stage I- controlled
Mémé	Female	63 y/o	2022	Essentially Normal
Nana	Female	70 y/o	2021	Hypertension Stage I
Abuelo	Male	60 y/o	2021	Dyslipidemia
Ingkong	Male	74 y/o	2021	Anemia

Table 1 **Biographical Sketch of the Respondents**

The name of participants in the table above was presented using pseudonyms to protect their identity. Initially, the researcher interviewed eight (eight) elderly whose ages range from 60 years old to 82 years old. There are five (5) women and three (3) men. After the initial analysis, the researcher used the transcript of six (6) participants as data saturation has been achieved. Also, to achieve the homogeneity of the participants, the exclusion and inclusion criteria were strictly observed.

Research Instrument

The interview guide was prepared in a semi-structured format. The set of questions in the interview guide was validated by Registered Psychologists and Registered Psychometricians to ensure that the questions measure the constructs that the study intended to measure as well as to guarantee the appropriateness of the language used and its relevance to the study's research statement. In this phenomenological study, the participants were encouraged to expound their answers to the questions that were asked. As the interview guide covered questions related to their lived experiences amid the pandemic, although the instrument was presented in both English and Filipino language,

only the Filipino language was used in communicating the questions to the participants for easier understanding and common use.

Data Gathering Procedure

To facilitate the process, a letter of introduction, letter of intent, and a copy of the interview guide were submitted via email to Ms. Dorothy G. Evangelista, the Chief of Staff on Social Welfare Operations of CSWDO, PDAO, and OSCA. After securing permission to conduct a study, the researcher visited Bahay Kanlungan in Maysan, Valenzuela to directly communicate with the administrators and staff of the institution to discuss the flow of the interview, the forms to be signed, and other information needed for the study. Interviews were conducted on three (3) separate days. It was based on the availability of the respondents and the institution. Before the interview starts, the researcher deliberately explained the purpose and scope of the study. Each participant was given a consent form that they signed or put their thumb mark to indicate their approval to participate in the study. upon evaluation, no additional follow-up/additional interview was deemed necessary. To ensure the validity and credibility of the themes that were discovered, triangulation was utilized. The researcher specifically employed an investigator and member triangulation where she asked the view of the members (respondents) and the opinions of the investigators (professionals). In addition, data saturation has been seriously taken into consideration in the process of analysis and interpretation. Out of the eight (8) participants that have been interviewed, only six (6) idiographic illustrations have been considered for this research study.

RESULTS

Superordinate Themes	Subordinate Themes
Seeing oneself in the current situation	*Institutionalization is the best option* *Accentuation of physical limitation* *Quest for belongingness*
Feelings toward sudden life transition	*Anguish state of not mattering* *Yearn for autonomy and freedom* *Sense of nostalgia*
Combating institutionalization	*Seeks happiness and support in the presence of non-family members* *Learns to be comfortable in the uncomfortable* *Clings to spirituality and faith in God's intervention*

Table 2 **Superordinate Themes and Subordinate Themes of the Study**

Interpretative phenomenological analysis was utilized to examine and interpret the participants' experiences to answer the research question. Testimonies of all six participants were used to provide explanations for the events that the study looked into. As the data were analyzed using the Interpretative Phenomenological Analysis (IPA), three (3) superordinate themes were identified - (a) *Seeing oneself in the current situation*; (b) *Feelings toward sudden life transition*, and (c) *Combating institutionalization*. These were classified based on the subordinate themes that were found in the analysis of the transcripts. For the superordinate theme – Seeing oneself in the current situation, the subordinate themes are: *(a) Institutionalization is the best option, (b) Accentuation of physical limitation,* and *(c) Quest for belongingness*. Next, for the superordinate theme – Feelings toward sudden life transition, the subordinate themes are *(a) Anguish state of not mattering, (b) Yearn for autonomy and freedom,* and *(c) Sense of nostalgia*. And lastly, for the superordinate theme – Combating institutionalization, the subordinate themes are: *(a) Seeks happiness and support in the presence of non-family members, (b) Learns to be comfortable in the uncomfortable,* and *(c) Clings to spirituality and faith in God's intervention.*

DISCUSSION

Seeing Oneself in the Current Situation

This superordinate theme talks about what the elderly think about themselves inside the institution and their common thoughts about their current situation.

Institutionalization is the best option. Transcripts revealed that all the participants thought that being institutionalized is the only and last option available for them. Being left alone, with no family members who would be willing to take care of them, and nowhere to go, has left them with no choice but to resort to living in an institution to survive the weight of the pandemic and beyond.

> *"I've been asked to transfer, I have nowhere to go to… I'm ashamed, so I asked the help of my adopted child to pass my application here." (Abuela)*

With a place that they can call now home and refuge, the elderly are so grateful for where they are right now, and no indication of regrets exists.

> *"I was brought there. I told the Lord, thank you because here I can sleep well, eat, and take a bath, meaning to say, all in all; I am surviving, far from danger. I said, thank you, that's what they did to me, Ma'am." (Gramps)*

This is related to the study which states that some elderly people think that it is a burden to be taken care of by their significant others despite spending a large portion of their lives taking care of them (White, 2005). In this sense, the elderly people see themselves in a helpless situation in the face of the pandemic which led them to enter the city-owned facility. The narratives of the elderly pointed out that the best decision that they could do due to their situation is to be admitted to Bahay Kanlungan.

Accentuation of physical limitation. During the interview, each elderly kept on stressing about their present physical limitations. They see themselves as someone who is now physically inadequate to the things they love. They emphasized their experiences regarding the physical difficulties they encountered brought about by their old age.

> *"…To be honest, my eyes are not that clear… Oh Lord, you know, Ma'am, I don't know what I look like because there's no mirror here. So, there were times when my eyebrows were here, and sometimes, some house parents would react on my eyebrows because we are not allowed to have a mirror. Back then, I used to wear eyeglasses; when I was admitted here, they told me that my eyes would be lasered because of catarata, but none happened." (Abuela)*

In addition, while inside the institution, they see themselves as someone who is physically inadequate, which made them think that because of these physical concerns, they can't socialize with others inside. For instance, daily, some of them would normally be quiet and spend time alone.

> *"I am just lying in the bed, just quiet primarily because of my eyes; I cannot boast in my words or what, I am just quiet." (Granny Pie)*

Based on the narratives of the elderly, issues about their physical self are found to be one of the primary reasons that influenced their decision to stay in Bahay Kanlungan. Deterioration and impairment in the aspect of physical health status are commonly associated with growing older. Older Filipinos' health functioning was found to have an impact on their total years of good life (Vicerra, 2022). Although the indicator is not limited to age alone, the prevalence of physical disability could affect the elderly's way of living and quality of life. Taken from the narratives of the respondents, their physical issues not only limit them from doing the things that they were doing before but also withhold them from socializing with the people around them.

Quest for belongingness. This subordinate theme highlights the thoughts of each elderly based on their need to be accepted. The elderly people are on the journey of finding belongingness before they enter the institution, and it continues even after they

are admitted. As they search for belongingness, they think that they need to modify how they behave, different from how they have been before their admission.

> *"ah to change something, you need to be patient, because before, as a mother, I'm just at home, right? But here, I have seen different attitudes and behaviors, and you need to study and learn from them. In fact, I have learned how to just eat a certain amount. I have learned how to mingle with different types of people and attitudes. That's it…because you need to, because you are not just there alone, you are with other people, and you are in a different home." (Abuela)*

The elderly people continue to seek a sense of belonging, which has caused them to construct conditions of worth as they stay in the institution. They believe that to feel that they belong inside the institution, they must act in a certain way. This behavior includes changing the way they relate with other people, strict adherence to the rules and regulations, and doing something to help the staff inside the institution. Indirectly, they believe that if they break these behaviors, they will be disliked and rejected by the people around them- the staff and their fellow elders. Feeling unwanted before admission, such acts are manifestations of their quest for belongingness. They search for approval to feel loved, valued, and belong.

Feelings Toward Sudden Life Transition

This superordinate theme talks about how the elderly feel about themselves towards the grand exodus that they have unexpectedly faced. This theme points out the emotion that they have felt upon their admission.

***Anguish state of not mattering*.** This subordinate theme underscores the way they feel about their family as their significant people. By feeling that they do not matter, the elderly expressed their sorrow and aches of feeling unimportant to those whom they regarded significant in their lives.

> *"I also do not like to stay with them because they have their own family now. Maybe, they also do not like responsibility, because our younger generation nowadays is much different." (Abuela)*

> *"Ma'am, that's how they repay me, they chose to let me go *short pause* and they don't have any regrets on that. So, I am deeply hurt for what they have done." (Granny Pie)*

Elderly people must maintain closeness and bond with family members (Chen, et al., 2008). As such, proximity and frequent family contact have an impact on the general well-being and sense of fulfillment in the life of the elderly. This could be the primary reason

why the respondents have an anguished state of not mattering. This anguish state manifests in the elderly by feeling like a burden by remaining with their family, by feeling deserted despite good deeds done for their family, and by feeling that their family has forgotten them. Because of their experiences before admission, feelings of abandonment, insignificance, and unimportance have resulted in feeling such emotions in the course of their sudden life transition.

Yearning for autonomy and freedom. This subordinate theme emphasizes their feelings of longing for freedom and autonomy while inside the institution. The elderly expressed their desire to be independent and in control of their life, just as they had been before the pandemic and before they were admitted to the institution.

> *"What I would like to go back to is the time when I was still free, unlike today when there's a pandemic. So, sometimes I like to ask when will this situation get better so we can live normally like before. That's it, Ma'am, that's what I like, to go back when freedom is still in our hands." (Abuela)*

In addition, being confided inside, with institutional rules and pandemic protocols to obey, the situation made them feel that they wished to move freely not just inside the institution realms but also outside to pursue something they were doing in the past.

> *"It is better before because we can go to different places that we like, you can freely walk, freely move inside the jeep… here, we are confided inside, we can't go out." (Lala)*

Two of the significant challenges that institutionalized elderly must face are losing independence and sharing space, both of which can trigger depressive symptoms and erode one's sense of self and well-being (Melendez-Moral, et al., 2014). Narratives of the elderly bring to light the comparison between their lives before and after they were admitted to the institution. Bound by the institutional routines and rules on top of the pandemic protocols, the elders feel restricted, regulated, and limited. This sudden life transition made them yearn for liberty to go outside the four walls of their room and the facility. Such longing is also expressed with the desire to leave the facility to pursue a dream, get a job, and help others as well. As a result, they long for freedom and independence—not just in terms of matters of institutions, but also in terms of having control over their lives just like before.

Sense of nostalgia. This subordinate theme draws attention to how the elderly feel about their past. The elderly reminisced about the things they love to do and the memories they had before with their significant others.

"Before, I can see them, but now I cannot. How can I see them if both of us are far from each other. I'm in a far place, how can I see them?" (Mémé)

The participants also shared a memory that they love doing with the significant people around them like singing with their choirmates, chatting with their neighbors, and bonding with their workmates.

"When I am still working because I felt like my life was better then. I have many friends there." (Gramps)

Rooted in their feelings toward their sudden life transition, the elderly talk about their feelings of longing for the past. Loneliness is one of the many emotions that can elicit especially for institutionalized elderly who lack family support. The narratives of the respondents highlight how they miss their past- the people in it and their former way of living. The grand exodus that they have faced unexpectedly has made them feel their longing for the good old times spent with loved ones.

Combating Institutionalization

This superordinate theme explores how the elderly handle their stay in the institution through their coping mechanism. The elderly conveyed their personal way of coping with their present condition.

Seeks happiness and support in the presence of non-family members. This subordinate theme denotes a coping mechanism for the elderly inside the institution. Because of feeling insignificant and being abandoned by their family and loved ones, they consider the company and presence of their non-familial relationship as a source of happiness and support that they need while inside the institution.

"Fellowships like this make us happy, just two weeks ago, the senior citizens of Valenzuela visited us, and they organized a program. It makes us so happy because, through that, we can forget all our sorrows and pain… Like thus, I feel happy when I am being interviewed, at least I have someone I can express my feelings to." (Abuela)

"Yes, it's happy, but of course when you remember your siblings, sometimes, you get sad; but when my friends are here, the others, I'm happy. If you know how to get along, it'll be okay." (Nana)

"Yes, sometimes there are people who visit for prayer meeting, there are also other institutions for us. We were happy on those days." (Gramps)

In the case of the respondents, transcripts revealed that as a way of coping with their stay in the institution, they generally look at their non-familial relationship as an alternative source of happiness and support. They find themselves happy whenever people are visiting them like students, social workers, fellow-senior citizens, and people from different religious groups. With that, it can be true that the happiness decline among the elderly can be halted by having a sufficient social support system and connection with others[49]. Thus, this theme conveys that doing that, helped the elderly to keep going despite the adverse thoughts and feelings that they have experienced.

Learns to be comfortable in the uncomfortable. This subordinate theme highlights how the elderly face their present life in the institution. The elderly talk about the ways they embrace discomfort and unfamiliarity by learning to be comfortable with the uncomfortable.

> *"It's like, at first, it's kind of hard, I find it hard… but as the days go by, I like it here. I like mingling with them. At first of course, I wondered, then, I got used to it; since I don't the people at first, I cooperated and adjusted so, as days passed by, it's okay." (Nana)*

Interviews of the participants have shown how the elderly deal with institutional routines. It showed how the elderly are starting to slowly embrace the new way of life as their coping mechanism for combating institutionalization. Contrary to what they usually come across in the past, life inside the institution entails learning to be comfortable in the uncomfortable. It allowed them to go out of what they considered their personal norm. Each narrative describes the way they embrace their new life and find meaning in learning to embrace their new reality, their new life as institutionalized elderly.

Clings to spirituality and faith in God's intervention. This subordinate theme presents another coping strategy used by elderly people living in institutions. The elderly demonstrated their faith in God by praying and believing in Him to help them get by while living at the facility.

> *"First of all is prayer…number 1 for me is prayer. This is all we need. Even though you can't see Him, you need to talk to Him. When you do it, everything is lighter… and your feelings are truly lightened. I leave it to You (referring to God, help me, I can't ask for more in God," (Nana)*
> *"I am enduring everything, Ma'am. May God be with me. Calling Him… calling upon Him to help me- to grant all the things I desire, to taste and see a new life." (Granny Pie)*

The pandemic protocols might have prevented the elderly from participating in religious events and practices but their faith in God remained unaffected. Despite their uttered and unuttered thoughts and feelings, the participants are combating institutionalization amid the pandemic by clinging to spirituality and faith in God's intervention. Religion and spiritual coping strategies have a significant impact on the participants in general when it comes to dealing with the issues associated with aging[36]. Narratives of the participants have stressed that prayer is their primary weapon in this battle and that God will see them through this hardship. Religiously active people frequently recover from hardship because faith can offer social support and foster optimism in the face of vulnerability (Brown & Tierney, 2009). As such, as a coping strategy, religion is likely to be remarkably significant for the elderly in terms of their subjective well-being.

Conclusions

This study investigated the lived experiences of the geriatric community amid the COVID-19 pandemic. It revealed that the way the elderly think, feel, and act plays a vital role in their stay at the institution. Filipino culture rarely institutionalizes the elderly because people always expect the family to provide innumerable sacrifices and sustain the idea of self-sacrificing (Pambid, Vicente & Noroña, 2021). Just like in the case of the participants of the study, for them, institutionalization is not certainly a goal, but they came up with the thought of admitting themselves to the institution to be able to survive the weight of the pandemic.

This study is congruent with Medeiros et al. (2020) who concurred that institutionalization has a detrimental impact on the lives of the elderly. The fact that they are struggling to survive the COVID-19 pandemic makes their predicament more complex. What is common about the participants of the study is that all of them experienced prejudice due to their old age. The narratives have shown that they are being referred to as liabilities, useless, and hopeless (Salvador and Alqahtani, 2019). This can result in negative views and feelings about themselves. For the participants of the study, institutionalization amid the pandemic has made them think that they are a liability, physically inadequate, and conditionally accepted. This sudden life transition made them feel the pain of not mattering, a longing for freedom, and a high sense of nostalgia. Consequently, despite their negative thoughts and feelings towards institutionalization, they still choose to rise above the challenges by choosing to cope positively. Instead of feeling lonely, they connect with their non-familial relationship, embrace life for what it is, and strengthen their faith in God.

It is crucial to take into mind that the geriatric community is not only particularly

vulnerable to the morbidity of the COVID-19 pandemic but also to the effect of institutionalization. It is also imperative to note that the regimented lifestyle of institutionalized elderly, who lack independence and privacy, also adds to their negative effects (Soumya, Anagha & Amulya, 2020). Furthermore, it is hugely important to address not just the physiological needs of the elderly but their emotional needs as well because as people get older, they become more socially isolated, and lose their social networks. As such, this study would like to emphasize that when a sense of belonging is improved, there is a possibility that reasons for life can also be improved.

Aging has social, economic, and psychological effects that affect not only the aged people but also the whole society at large. As institutionalization posed a detrimental impact on the lives of the elderly, their predicament has become more complex due to the challenges that were brought to them by the fatal phenomenon called the COVID-19 pandemic. Since geropsychology, as one of the branches of psychology is not being given much attention, the devastating effects of the COVID-19 phenomenon may signal a new epoch in the provision of care and welfare of our elderly. With that, having people, who are in the field of psychology and mental health can be a valuable ally in navigating all the changes brought on by this process of human development.

Recommendations

By examining the lived experiences of the geriatric community, creating intervention programs specially designed for them can be a powerful point of action. As such, it is imperative to create strategic planning to cater to the geriatric population's diverse and progressing needs. The social and medical requirements of the elderly are beyond the capacity of the country. As such, the Administrators of the Institutions should work hand in hand with the local government unit in establishing and building elderly nursing homes among their constituents.

As the geriatric community is not only specifically vulnerable to the adverse effects of the COVID-19 pandemic but also to the impact of institutionalization, the workforce – nurses, caregivers, guidance counselors, and psychologists must have adequate training to deal with the elderly as they require a complex array of care and management.
To combat loneliness and isolation, a sense of belongingness among the elderly should also be given huge importance as it will increase their reasons to continue living. This can be done through support programs for the elderly. Help them to connect with the people around them and the visitors outside the facility.

As the aging bracket in the country is increasing, the researchers are hereby encouraged to conduct more studies on the Filipino elderly to shed light on the needs and challenges

of this population. Psychology practitioners are also encouraged to advocate for the geriatric community as valuable members of society.

Compliance with Ethical Standards

The protection of the respondents' rights, dignities, and privacies is a sacred obligation of a qualitative researcher most especially in the context of IPA (Alase, 2017). To facilitate the study, the researcher sought an Ethical Clearance Certificate from the Graduate School of the Polytechnic University of the Philippines. This certificate has allowed the researcher to conduct the data gathering. The researcher has sought approval from the Office of Social Welfare Operations of CSWDO, PDAO, and OSCA. All participants have freely and voluntarily given their consent to participate in the study after a thorough explanation of the purpose of the study. Likewise, audio recordings were done upon the participants' consent. The staff-in-charge in the institution was asked to countersign the form as a witness. During the interview, the participants' safety and comfort were assured by the researcher and institution personnel. Also, it is important to note that the researcher has prepared a distress protocol that was observed and followed throughout the interview. This distress protocol indicates that if the participant has shown symptoms of distress and cannot continue the interview anymore, an on-call Psychologist will be asked to speak with the participant. To report, during the interview with the participants, the researcher did not encounter any distressed participants.

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ALTERNATIVE LEARNING SYSTEM (ALS) LEARNERS LITERACY ACQUISITION IN SELECTED BUREAU OF JAIL MANAGEMENT AND PENOLOGY (BJMP) IN CAVITE PROVINCE: AN ANALYSIS

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ABSTRACT

This research aims to investigate the literacy acquisition among Alternative Learning System (ALS) learners within selected Bureau of Jail Management and Penology (BJMP) facilities in Cavite Province in the municipality of Tanza and Carmona in the school year 2022-2023. The research employs a descriptive approach and includes an adopted and modified survey questionnaire based on Functional Literacy, Education and Mass Media Survey as a primary tool to gather the data and standardized literacy assessments tool based on Post Functional Literacy Test (FLT). Findings revealed that BJMP learner's literacy acquisition manifest closely moving towards the mastery level needed to face the globalized literacy challenges and skills. Moreover a diverse learners' profile highlights the unique barriers faced by ALS learners within the correctional system. Factors such as limited access to educational resources and the psychological impact of incarceration emerge as critical determinants influencing literacy acquisition. In addition, the findings serve as basis for the development of sustainable activities tailored to the specific needs of ALS learners within the correctional context and the establishment of support systems that foster a conducive learning environment for incarcerated individuals pursuing literacy through ALS program specifically in digital citizenship, scientific and critical thinking skills and mathematical and problem solving skills where they got the lowest score in FLT. Finally, the researchers suggest further exploration of literacy acquisition of Person Deprived of Liberty (PDL) among BJMP ALS learners in other municipalities and perform

a comparative study to see if the result/findings represent the general situation of BJMP ALS learners in the Division of Cavite Province Alternative Learning System.

Keywords: *Functional Literacy Test, Literacy, Program, Development, Acquisition*

INTRODUCTION

The literacy acquisition of Alternative Learning System (ALS) learners within the Bureau of Jail Management and Penology (BJMP) in Cavite Province serves as a critical nexus between education and the rehabilitation of incarcerated individuals. The significance of implementing sustainable literacy activities within correctional facilities lies in the transformative potential of education to break the cycle of recidivism and equip inmates with essential skills for successful reintegration into society. Many inmates within the BJMP in Cavite Province may not have had the opportunity to complete formal education due to various circumstances. The ALS program offers a lifeline to these individuals, empowering them with literacy skills that are fundamental for effective communication, critical thinking, and personal development. By addressing the educational gaps of inmates, we aim to contribute to their sense of self-worth and agency.

Literacy acquisition through the ALS program can provide inmates with the tools necessary to seek employment, engage in positive social interactions, and make informed decisions upon reentry into society. Sustainable literacy activities within the BJMP are important, therefore, a strategic investment in breaking the cycle of incarceration and fostering a path towards rehabilitation. In addition, education is not only a means to acquire knowledge but also a catalyst for personal growth and well-being. Literacy skills contribute to an individual's ability to express themselves, understand their rights and responsibilities, and engage in continuous learning. Sustainable literacy activities in correctional facilities can create a positive and constructive environment that supports the psychological and emotional well-being of inmates. Equipping inmates with literacy skills goes beyond the confines of correctional facilities. It serves as a foundation for their successful reintegration into the community. Inmates who have undergone literacy programs are better positioned to contribute meaningfully to society, whether through gainful employment, community service, or positive engagement with their families.

Most countries in Southeast Asia and Africa has been identified as the most impediment country in terms of economic development hit by economic crisis bought by poverty which is link to illiteracy. Philippines is not exempted in economic crisis bought about poverty as one of the member of Southeast Asia Countries with the highest poverty rates, out-of-school Children (OSCs), out-of-school youth (OSYs) and out-of-school Adult (OSCs) were group by poverty, owing lack of educational opportunities cause by illiteracy (Apao et.al, 2014).

Moreover, section 2 of RA 9155 highlights the function of the Alternative Learning System (ALS) in providing free and compulsory education to Out-of-school youth and adults. A parallel education learning system in the Philippines provides opportunities for out-of-school youth and adult (OSYA) school leavers to access equivalent pathways to complete basic education. ALS education is designed to meet the educational needs of schools dropouts, adults, and other disadvantaged learners who do not have access to formal education; many who are: deprived, depressed, and underserved as described by the legislation (DepEd, 2016).

Furthermore, since 1990, the literature has shown that prisoners who attend educational programs while they are incarcerated are less likely to return to prison following their release (Greenberg, 2008). Studies in several States have indicated that recidivism rates have declined where inmates have received an appropriate education. In addition, the right kind of educational program leads to less violence by inmates involved in the programs and a more positive prison environment (Vacca, 2004). Allowing for behavioral changes inside prisons necessarily implies education. In Thailand, the point is not only to organize professional training courses but also to make detainees aware of the fact that they belong to a community of values. Non-formal education allows the necessary flexibility to an individual approach of training that must take into account the particular needs of learners.

In international context, the involvement of all the staff working in prison, as well as the training of the teaching staff, are the essential lines of policies currently developed in Thai prisons (Phatininnart, 2009). Participation in educational activities by the imprisoned group mostly depends on the desirable needs and interests of the convicts themselves - whether they wish to upgrade their educational background or see the benefit of education for improving their quality of lives. Some of them have realized to the fact that due to their poor education they have tended to be misled by ill-disposed individuals, or have been taken advantage of by other, more strong-willed people (Phatininnart, 2009).

According to Jacobi (2008), research on incarceration and educational access continues to reveal the stark reality for many adjudicated youth: without access to educational opportunities recidivism is probable. Yet conventional methods of teaching critical reading, writing, and thinking skills are not always successful for juveniles who have found little success (or hope) in traditional schooling. Jacobi argues that alternative literacy practices can effectively supplement conventional general education and vocational training courses by engaging juveniles through creativity, critical self-awareness, and a shift in how audience and authorship is understood.

Similarly to the study of Romoroza (2019), reading comprehension is one of the problems encountered by learners in the field of reading in Alternative Learning System Cantilan District Jail in terms of identifying the main idea of the selection resulting to poor reading comprehension.

Objectives of the Study

The study aims to:

1. Identify the profile of the respondents in terms of:
    a. Age;
    b. Gender;
    c. Civil Status;
2. Identify the respondents functional literacy acquisition along six (6) learning strand and;
3. What are the demographical differences of the respondents based on their literacy acquisition?

METHODOLOGY

Sampling

This research study employs a descriptive approach research design involving all learners enrolled in Alternative Learning System in school year 2022-2023 in the Bureau of Jail Management and Penology (BJMP) in the municipalities of Tanza and Carmona City. Previous school year and learners and other municipalities are not included in the study.

Data Collection

The research also includes a modified survey questionnaire based on Functional Literacy, Education and Mass Media Survey as a primary tool to gather the data and standardized literacy assessments based on Post Functional Literacy Test (FLT) administered to all ALS learners.

Ethical Issue

Confidentiality of all information is used for research purposes only.

RESULTS AND DISCUSSION

Demographic Profile of the Respondents

Table 1. Demographic profile distribution of respondents

Variable		Frequency (N=140)	Percentage
Sex	Male	107	76.43
	Female	23	23.57
Age			
	15	0	0
	16-20	9	6.43

	21-30	65	46.43
	31 above	66	47.14
Civil Status			
	Single	53	37.86
	Married	85	60.71
	Widow	2	1.43

Table 1 shows the demographic profile distribution of the respondent. The data revealed that 76.43% were male and 23.57% were female; thus, most of BJMP ALS learners in two municipalities were male. As the age distribution, the data shows that respondent with the age 31 above have the highest frequency of 47.14%; 46.43% has an age of 21-30, 6.43% has an age of 16-20. In terms of civil status, the data shown that most of the respondent is married with 60.71%, 37.86% are single and 1.43% is widow. This respondent's demographic characteristic was identical to the similar studies on ALS learners (Ocampo, 2021).

Table 2 shows the Alternative Learning System Post Functional Literacy Assessment skills in elementary level in two BJMP facilities in Cavite Province (Tanza and Carmona City) for school year 2022-2023. The result revealed that the level of ALS learners acquisition based on functional literacy test is under moving towards mastery. It implies that the ALS learners enrolled in the elementary level manifest the literacy skills moving toward mastery level. The result shows that understanding self and society have the highest acquisition by the learners with 90.00% mean percentage score. This implies further that the youth and adult learners supports for understanding the society and shaped by their experiences and best learning comes from their personal experiences and society. Moreover, communication skills in English got the least mean percentage score with 63.25% mean percentage score, the result revealed that Elementary learners has an average literacy skills in terms of communication specifically in English language followed by Learning Strand Filipino and Digital Citizenship got the lowest mean percentage score.

Table 2. Descriptive Statistic on the Functional Literacy Assessment of ALS Learners in Elementary Level in three Municipalities based on Mean Percentage Score

Functional Literacy Skills	MPS	Description
LS 1 - Communication Skills - English	63.25%	Average
LS 1 - Communication Skills – Filipino	79.64%	Moving Towards Mastery
LS 2 - Scientific and Critical Thinking Skills	88.50%	Moving Towards Mastery
LS 3 - Mathematical and Problem-Solving Skills	83.44%	Moving Towards Mastery
LS 4 - Life and Career Skills	85. 83%	Moving Towards Mastery
LS 5 - Understanding Self and Society	90.00%	Closely Approximating Mastery
LS 6 - Digital Citizenship	81.25%	Moving Towards Mastery
Total	**81.70**	**Moving Towards Mastery**

Legend: based on Descriptive Equivalent on mastery/achievement – DepEd Memo No. 160, s.2012

MPS	***Descriptive Equivalent***
96-100%	*Mastered*
86-95%	*Closely Approximating Mastery*

66-85%	*Moving Towards Mastery*
35-65%	*Average*
15-34%	*Low*
5-14%	*Very Low*
0-4%	*Absolutely no Mastery*

Table 3. Descriptive Statistic on the Functional Literacy Assessment of ALS Learners in Junior High School level in three Municipalities based on Mean Percentage Score

Functional Literacy Skills	MPS	Description
LS 1- Communication Skills - English	78.67	Moving Towards Mastery
LS 1- Communication Skills – Filipino	76.00	Moving Towards Mastery
LS 2 - Scientific and Critical Thinking Skills	64.50	Moving Towards Mastery
LS 3 - Mathematical and Problem-Solving Skills	77.17	Moving Towards Mastery
LS 4 - Life and Career Skills	85.00	Moving Towards Mastery
LS 5 - Understanding Self and Society	92.00	Closely Approximating Mastery
LS 6 - Digital Citizenship	78.00	Moving Towards Mastery
Total	**78.76**	**Moving Towards Mastery**

Legend: *based on Descriptive Equivalent on mastery/achievement – DepEd Memo No. 160, s.2012*

MPS	***Descriptive Equivalent***
96-100%	*Mastered*
86-95%	*Closely Approximating Mastery*
66-85%	*Moving Towards Mastery*
35-65%	*Average*
15-34%	*Low*
5-14%	*Very Low*
0-4%	*Absolutely no Mastery*

Table 3 presents the Junior High School literacy skills in two Bureau of Jail Management and Penology (BJMP) in the municipalities in Cavite Province for school year 2022-2023. The findings revealed that the Junior High School level learners acquisition of functional literacy skills under moving towards mastery. The results shows that learning strand 5 or Understanding self and Society got the highest mean percentage score with 92.00% closely approximating mastery level. In terms of least mastered literacy skills, the findings shows scientific and critical thinking skills learning strand 3 with the score of 64.50% followed by mathematical and problem solving skills, communication skills and digital citizenship, this implies that the Junior High Schools learners need to further enhance those functional literacy skills.

Moreover, the mean percentage score result both elementary and junior high school level learners literacy skills must be addressed by ALS implementers by developing localized instructional material and program to highlight the skills acquisition and knowledge and provide more hands-on experiences to adult learners to gain practical experiences with the supervision of ALS specialist, schools supervisor, jail officer through the enhancement ALS program for person deprived of liberty.

Demographic differences of the respondents based on their Functional Literacy Acquisition for Elementary level

When classified by sex, the result shows that communications skills, scientific and critical thinking skills, mathematical and problem solving skills, life and career skills, understanding self and society and digital citizenship do not vary significantly shown in table 4.

Table 4. Significant differences on literacy skills of ALS BJMP Learners when group according to sex

Functional Literacy Skills	n	t-value	p-value
LS 1 - Communication Skills - English	40	1.23	0.212
LS 1 - Communication Skills – Filipino	40	0.97	0.321
LS 2 - Scientific and Critical Thinking Skills	40	1.35	0.153
LS 3 - Mathematical and Problem-Solving Skills	40	-0.03	0.965
LS 4 - Life and Career Skills	40	-0.23	0.604
LS 5 - Understanding Self and Society	40	0.92	0.302
LS 6 - Digital Citizenship	40	-1.01	0.310

Table 5. Significant differences on literacy skills of ALS BJMP Learners when group according to age

Functional Literacy Skills	n	t-value	p-value
LS 1 - Communication Skills - English	40	-1.079	0.281
LS 1 - Communication Skills – Filipino	40	-0.585	0.555
LS 2 - Scientific and Critical Thinking Skills	40	-1.562	0.117
LS 3 - Mathematical and Problem-Solving Skills	40	-0.112	0.907
LS 4 - Life and Career Skills	40	3.304	0.001
LS 5 - Understanding Self and Society	40	-0.660	0.503
LS 6 - Digital Citizenship	40	0.976	0.321

Moreover, table 5 shows the significant differences on the functional literacy skills of ALS when group according to age. When group by age, the findings shows that communication skills, scientific and critical thinking skills, problem solving skills, understanding self and society and digital citizenship do not vary significantly. However, life and career skills have significant with p-value 0.001 when group according to age. Adult learners between 21-30 years old have bearing in the acquisition of literacy specifically in terms of life and career skills.

Table 6. Significant differences on literacy skills of ALS BJMP Learners when group according to civil status

Functional Literacy Skills	n	t-value	p-value
LS 1 - Communication Skills - English	40	0.542	0.204
LS 2 - Communication Skills – Filipino	40	0.666	0.501
LS 3 - Scientific and Critical Thinking Skills	40	0.245	0.803
LS 4 - Mathematical and Problem-Solving Skills	40	1.404	0.160
LS 5 - Life and Career Skills	40	0.890	0.372
LS 6 - Understanding Self and Society	40	-0.570	0.566
LS 7 - Digital Citizenship	40	0.307	0.755

In terms of civil status in table 6, the result reveals that communication skill – Filipino and English, scientific and critical thinking skills, mathematical and problem solving skills, life and career skills, understanding self and society and digital citizenship do not vary significantly.

Demographic differences of the respondents based on their Functional Literacy Acquisition for Junior High School level

Table 7 shows the significant differences on functional literacy skills of Junior High School level when group according to sex. The result revealed that communication skills, mathematical and problem solving skills, life and career skills, understanding self and society do not vary significantly. On the other hand, scientific and critical thinking skills and digital citizenship have significant differences when group according to sex.

Table 7. Significant differences on the functional literacy skills of Alternative Learning System Learners when group according to sex

Functional Literacy Skills	n	t-value	p-value
LS 1- Communication Skills - English	100	-1.031	0.302
LS 1 - Communication Skills – Filipino	100	1.555	0.120
LS 2 - Scientific and Critical Thinking Skills	100	3.156	0.001
LS 3 - Mathematical and Problem-Solving Skills	100	0.593	0.552
LS 4 - Life and Career Skills	100	-0.271	0.786
LS 5 - Understanding Self and Society	100	1.835	0.066
LS 6 - Digital Citizenship	100	2.235	0.003

Table 8 shows the significant differences on functional literacy skills of Junior High School level when group according to age. The result revealed that all learning strand do not vary significantly on the literarily acquisition of ALS learners. However, there is a gap in digital citizenship skills. Young learners between 15 to 20 years old have the highest rate of information and communication integration in their literacy skills.

Table 8. Significant differences on the functional literacy skills of Alternative Learning System Learners when group according to age

Functional Literacy Skills	n	t-value	p-value
LS 1 - Communication Skills - English	100	1.513	0.131
LS 1 - Communication Skills – Filipino	100	1.109	0.268
LS 2 - Scientific and Critical Thinking Skills	100	1.048	0.295
LS 3 - Mathematical and Problem-Solving Skills	100	1.894	0.059
LS 4 - Life and Career Skills	100	1.271	0.204
LS 5 - Understanding Self and Society	100	1.983	0.048
LS 6 - Digital Citizenship	100	-2.176	0.030

Table 9 shows the significant differences on functional literacy skills of Junior High School level when group according to civil status. The result revealed that all learning strand do not vary significantly.

Table 9. Significant differences on the functional literacy skills of Alternative Learning System Learners when group according to civil status

Functional Literacy Skills	n	t-value	p-value
LS 1- Communication Skills - English	100	*-0.855*	*0.393*
LS 1 - Communication Skills – Filipino	100	*-0.187*	*0.852*
LS 2 - Scientific and Critical Thinking Skills	100	*1.082*	*0.280*
LS 3 - Mathematical and Problem-Solving Skills	100	*-2.246*	*0.025*
LS 4 - Life and Career Skills	100	*0.886*	*0.376*
LS 5 - Understanding Self and Society	100	*-0.212*	*0.832*
LS 6 - Digital Citizenship	100	*0.880*	*0.379*

Conclusions

The functional literacy skills acquisition of Person Deprived of Liberty (PDL) BJMP learners in two municipalities in the province of Cavite specifically in Tanza and Carmona was investigated. Since the PDL learners attainment of their functional literacy skills based on Functional Literacy Test is generally moving towards the mastery, the research findings revealed that PDL ALS learners do not have the complete mastery skills acquisition literacy needed to face 21st century learners and globalized world challenges. The significant contributions of this study highlight and shows how ALS learners are progressing in their learning towards the literacy mastery skills, which will serve a baseline data, foundation of ALS Cavite Province for policy, strategic and intervention to help PDL ALS students to cope with the challenges in terms of 21st century learners and globalization. The study also finds that sex, age, and civil status impact the acquisition of PDL ALS learners' functional literacy skills in two municipalities in Cavite province.

Finally, the study adds to the body of knowledge on BJMP ALS, non formal education and also to literacy coordinating in terms of BJMP adult education, the second chance education but not a second class by shedding light on the current state and situation of Alternative Learning System, specifically in the Bureau of Jail Management and Penology in Cavite Province and also in the Philippines, in terms of promoting youth and adult literacy skills on person deprived of liberty (PDL). More specifically, the findings added to existing findings and studies on evaluating and assessing Alternative Learning System program and project by providing new perspectives and recommendations. A possible expansion of this study will be look at the ALS implementors skills and competencies.

Recommendations

Based on the findings, the researchers recommend: a strong partnership, linkages in government and private institution that provide extension activity and project to assist ALS learners in improving their functional literacy skills, specifically in communication skills, digital citizenship, mathematical and problem solving skills and scientific and critical thinking skills. And given that the current study was conducted in two Bureau of Jail Management and Penology in two municipalities in Cavite Province, it may be worthwhile to investigate the Functional Literacy Skills of BJMP ALS learners in the 18 municipalities and 3 cities in the Division of Cavite Province and perform a comparative study to see if

the results/findings represent the general situation of BJMP ALS learners in the Division of Cavite Province Alternative Learning System.

Compliance with Ethical Standards

The researchers informed the respondent of the purpose of the study, that the latter's participation was voluntary and confidentiality of information was ensured. The respondent's anonymity was guaranteed. They may opt to participate or not by answering the survey questionnaire, the data was collected onsite through District ALS Coordinator and ALS teachers. The respondents expressed their thoughts freely and confidently. There was no conflict of interest since the researchers did not handle the learning session of the respondents. The data collected were respected and kept private and will be disposed when no longer needed.

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ANALYZING THE WAY ESL STUDENTS ENGAGE IN CONVERSATIONS: A STUDY ON TURN-TAKING PATTERNS

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ABSTRACT

This study employed qualitative analysis to scrutinize the turn-taking patterns of ESL (English as a Second Language) students in classroom settings. The researchers investigated how ESL students and their ESL teacher took turns during the second term of the 2023–2024 school year at National University-Manila. Analysis of transcribed discourse identified various turn-taking patterns among ESL students and their instructor. Findings revealed that, alongside challenges like managing overlapping speech and overcoming cultural differences, common turn-taking patterns included recognition overlap, terminal overlap, choral overlap, competitive overlap, continuers, cooperative overlap, progressional overlap, transitional overlap, and conditional access to turns. The predominant turn-taking strategy observed involves the use of transitional cues, such as pauses or intonation patterns, to signal transitions between speaking turns. Additionally, self-selection of turns is common, with participants frequently opting to speak following brief periods of silence. ESL learners encountered challenges in deciphering transitional cues, managing overlapping speech, and adapting to culturally diverse conversational norms. Both verbal and nonverbal cues, such as raising hands, maintaining eye contact, and actively listening to others, served as indicators of one's intent to speak. Drawing from these results, recommendations are provided for ESL educators and administrators to implement targeted interventions and instructional approaches aimed at supporting ESL students in their language acquisition journey.

Keywords: *ESL students, turn-taking patterns, classroom discourse, conversational patterns, challenges, strategies, and communication competence*

INTRODUCTION

For many years, linguists and academics have been captivated with the study of language acquisition and communication. This interest originates from the work of renowned people like Noam Chomsky, whose seminal contributions transformed our comprehension of language structure and acquisition mechanisms. Chomsky's theories—in particular, his notion of universal grammar—provided a basis for further studies in ESL teaching by examining how people learn and use language. Prominent individuals like Dale Carnegie, whose timeless ideas presented in "How to Win Friends and Influence People" are still relevant to language learners and professionals worldwide, have long promoted effective communication skills. For ESL students overcoming language and cultural hurdles, Carnegie's focus on empathy, active listening, and interpersonal communication emphasizes the need of learning effective communication in attaining personal and professional success.

Scholars such as Deborah Tannen and Erving Goffman pioneered the subject of discourse analysis, which provides essential insights into the complex dynamics of communication. Discourse analysts have been inspired in identifying the underlying patterns and structures that define spoken and written discourse by Tannen's groundbreaking research on conversational styles and Goffman's investigation of interaction rituals. Through their contributions, we now have a better knowledge of how language operates in social circumstances and a framework for researching communication tactics and turn-taking behaviors.

According to Uvaniv (2009), there are five distinct domains of discourse analysis that may be identified in relation to language teaching: cohesion, coherence, information structure, turn-taking, and critical discourse analysis (Celce-Murcia & Olshtain, 2000, p. 7). It is noteworthy that Norman Fairclough (2003, p. 3) proposes a distinction between discourse analysis that is focused on textual aspects and discourse analysis that is not focused on them.

To Fairclough (2003, p. 4), there is a strong tradition of using the phrase "critical discourse analysis" without taking into account the text's linguistic qualities, which are crucial for language instruction. Fairclough (2003) attempts, but ultimately fails, to bring these two discourse analysis philosophies together under the banner of "critical discourse analysis" in his book Analyzing Discourse: Textual Analysis for Social Research. For this reason, rather than Critical Discourse Analysis in EFL Reading, the degree project is called Discourse Analysis in EFL Reading.

The sociologists Harold Garfinkel and Harvey Sacks' explanation of the idea of turn-taking in discussions has played a significant role in influencing our comprehension of interactional dynamics. Sacks's groundbreaking work in Conversation Analysis and Garfinkel's ethnomethodological approach have given scholars analytical tools to study the mechanics behind conversational encounters. The foundation for researching turn-taking behaviors among ESL students has been laid by their turn-taking studies, which

have demonstrated the complex ways in which participants negotiate speaking turns and preserve coherence in conversation.

Turn-taking, a speech conversion system, is appropriate for a range of conversation patterns, according to Bingyang (2023). In an essay titled "A Simplest Systematics for the Organization of Turn-Taking for Conversation," Sacks and his colleagues develop a turn-taking system that consists of two parts: a description of the elements of turn and a set of rules. It was later incorporated into literary works and studied in institutional discourse in the early 1970s. Scholars have long been investigating the structure and function of turn-taking in discourse. With the development of new media, there has been a growing focus on interactions between people and computers as the primary mode of communication, leading to the emergence of WeChat language during these interactions. Turn-taking poses a fundamental challenge in discourse analysis, which can be applied to analyzing multiparty conversations on WeChat. Despite the widespread use of turn-taking systems in WeChat, multiparty conversations on the platform have received less attention compared to naturally occurring everyday conversations or comparative analyses using chat rooms.

The notion of "turn," initially introduced by American sociologist Harvey Sacks, has evolved over time along with the development of turn-taking theory. Sacks and his colleagues established the turn-taking system in 1974, which laid the foundational framework for everyday discourse, although the concept of a turn itself was not explicitly defined. This approach underscores the integral role of each turn, which may encompass words, phrases, clauses, or complete sentences. In the realm of daily discourse, as outlined in the Journal of Linguistics and Communication Studies 24, a turn serves as the fundamental unit of communication.

Shi (2023) conducted a literature review on turn-taking theory, which has garnered significant attention across various disciplines since its inception. Previous studies have predominantly focused on interpreting the definition and rules of turn-taking without deviating from Sacks' framework. Applications of turn-taking theory have been explored in various contexts such as news interviews, TV programs, classroom interactions, and daily dialogues, both domestically and internationally. However, there has been limited research on the turn features of WeChat language and multiparty conversations on WeChat. Through an analysis of the turn system in WeChat multiparty conversations, his study aimed to elucidate the characteristics of WeChat language and summarize its mechanisms.

According to Liu Hong (1992), it is the speaker's continuing speech at any point throughout the discussion, ending with the speaker and hearer switching roles, everyone falling silent, or the speaker giving a signal to stop speaking. The majority of academics in this discipline agreed with this definition. The entirety of a talk throughout a communication process makes up the turn.

There are two different ways to define turn, yet both have the same meaning. Willis Edmondson claims that there are two meanings associated with the term "turn." There

are two aspects to communication: the expression of the speaker, or what they say, and the possibility of becoming the speaker itself. Turn-taking usually happens in transitional places—places where a turn could end. During the exchange, speaker A speaks and then stops, and speaker B speaks and then stops as well, creating an A-B-A-B distribution of utterances. Turn and a set of rules have two constructional elements that Sacks and his colleagues dissected. The next turn is assigned by the present speaker's choosing or by self-selection, according to two construction components.

To reduce quiet and prevent overlap, a set of rules governing turn construction and transfer were created. One speaker at a time is allowed to choose the next speaker; if not, speakership may be moved by self-selection to the transition-relevant location. To prevent quiet, the present speaker will continue to talk and reapply the rules if these two choices are not selected. Additionally, they identify fourteen characteristics of the systemic organization of turn, which together allow us to sum up how speakers take turns in an orderly manner throughout a discussion, including holding or giving up the opportunity to speak.

The majority of overlap happens at the transition-relevance point, typically as a result of participants in the discussion vying for the next turn. Daily communication does have overlaps and silences, although most of them are quite brief. When many speakers talk at once, it's referred to as overlap, and research on the subject mostly focuses on determining what causes the phenomena. According to Huang (1987), overlap will occur when there is a simultaneous start and butting-in interruption. According to Schegloff (2000), overlap falls into four categories: choral, conditional access to the turn, continuers, and terminal overlaps.

According to MaChunyan (2014), overlap can be caused by mistaken judgment, numerous back channels, simultaneous self-selection, collaborative completion, and stoppage. When overlap occurs, speakers typically give up trying to win the following turn.

To Levinson (2015), there are several ways to help the speaker get the next turn. These include purposefully slowing down, intensifying, and repeating phrases. In conclusion, the speaker has the freedom to decide whether to continue speaking or to stop. The person who starts an overlap can do anything from raise the volume to repeat things to get the next turn. Silence is typically considered a turn in the colloquial turn. The turn of silence, according to Levinson (1983), can be classified as a pause that takes place within a turn, a gap or lapse that happens between two adjacent turns, or quiet that refers to the meaning or attributed silence that can function as a turn. The majority of the three distinct forms of quiet occur in the transition-relevance domain, signifying a signal that ends the information and typically initiates sharing. To preserve speakership, speakers who tolerate minimal quiet will employ hesitation fillers like "mm" or "however." When many speakers take the stage at once, some attendees will give up their seats.

The efforts of educators like TESOL pioneer James E. Alatis, whose support of language instruction and teacher preparation has had a significant influence on the discipline, have advanced ESL education. Because of Alatis's involvement in groups like

the TESOL International Association and his studies on language planning and policy, people now have a better grasp of pedagogical techniques and language education practices. His commitment to encouraging linguistic variety and helping language learners has made a significant contribution to the field of ESL instruction.

The significance of sociocultural elements in language acquisition has been emphasized recently by academics such as Claire Kramsch, who has emphasized the influence of ideology, power, and identity on communicative behaviors. Researchers and educators have been encouraged to take into account the larger socio-political circumstances that shape language learning experiences by Kramsch's work on the symbolic aspects of language and her support for a sociocultural approach to language instruction. Her observations have led to a reassessment of conventional language teaching techniques and highlighted the importance of culturally sensitive pedagogies in ESL instruction.

Researchers and practitioners in the field of ESL communication are influenced by the theories and practices of these prominent personalities and stand on their shoulders as the field develops. Through the incorporation of perspectives from esteemed academicians and trailblazers, we may propel our comprehension of turn-taking behaviors in English as a Second Language learners and devise efficacious tactics to bolster their communicative growth in varied linguistic and cultural environments.

The emphasis on helping students build their communicative competence—which includes language competency as well as sociolinguistic and discourse competence—is a significant trend in ESL instruction. Gaining an understanding of turn-taking behaviors is essential to improving students' capacity for meaningful discourse and productive participation in communicative engagements.

In ESL classes, there's a rising movement to create engaging educational settings where students actively participate in conversation, teamwork, and peer interaction. Examining turn-taking practices provides insight into the nature of classroom discussion and helps to shape teaching strategies that encourage active involvement and engagement from students.

There is a tendency toward using digital tools and resources into ESL training as a result of the growing usage of technology in education. Turn-taking patterns in technology-mediated communication platforms may be examined to gain understanding of how technology affects ESL students' interactional norms and communication dynamics.

The study emphasizes the importance of professional development for teachers is to promoting efficient communication techniques in ESL classes. Teachers are essential in helping students navigate turn-taking conventions and promoting classroom debate. Initiatives for teacher preparation targeted at improving pedagogical abilities and encouraging student participation can benefit from an understanding of the opportunities and problems related to turn-taking.

Consequently, this study advances the continuing development of research methodology in the field of English as a Second Language (ESL) instruction, namely in the domains of discourse analysis and qualitative research. Through the use of rigorous research methodologies and analytical strategies, the study offers insightful information on the intricate structure of ESL students' classroom interactions and turn taking patterns. Existing literature often focuses on general aspects of language acquisition and classroom discourse, with limited attention to the specific turn-taking patterns exhibited by ESL students. This study addresses this gap by providing a detailed analysis of turn-taking behaviors among ESL students in classroom interactions.

Many studies overlook the influence of cultural and linguistic factors on turn-taking practices, particularly in ESL contexts. This study recognizes the importance of considering these factors and explores how they impact the communication dynamics of ESL students.

While some research discusses theoretical aspects of turn-taking, there is a lack of practical recommendations for educators to support ESL students in developing their communicative competence. This study bridges this gap by offering actionable recommendations informed by empirical findings.

Previous studies often provide broad overviews of classroom discourse without delving into specific turn-taking patterns and strategies employed by ESL students. By focusing specifically on turn-taking behaviors, this study offers a comprehensive analysis of classroom interactions in ESL settings.

Many studies prioritize teacher perspectives or observational data, overlooking the experiences and insights of ESL students themselves. This study incorporates interviews and focus groups with ESL students to provide a more holistic understanding of their turn-taking practices and challenges.

By building on this body of knowledge and research, this study hopes to further the conversation around turn-taking and communication in ESL classes. The researchers sought to identify trends, difficulties, and techniques used in turn-taking by carefully examining conversational interactions amongst ESL students. This information will then be used to drive instructional practices and interventions that are designed to improve students' communicative competence.

Research Questions

To improve the communicative competence of ESL students through targeted interventions and instructional practices, this study sought to ascertain the turn-taking behaviors of ESL 1 students in their ESL classes at National University during Term 2 of the school year 2023–2024.

More specifically, it attempted to answer the following questions:

1. What turn-taking patterns are most exhibited among the ESL students and their teacher as revealed by the transcribed discourse of the ESL classes?

2. What challenges do ESL students encounter in managing conversational exchanges, particularly in English-speaking contexts?

3. How do ESL students signal their intent to speak and negotiate conversational turns in classroom interactions?

4. Based on the results of the transcribed discourse in ESL classes, what recommendations can be proposed for educators and practitioners to enhance ESL students' communicative competence through targeted interventions and instructional practices?

Significance of the Study

This study is significant because of the benefits that it could offer to the following groups:

ESL students. ESL students may build strategies to improve their communication competency in English-speaking environments and nurture more confidence and proficiency by recognizing trends and problems related to turn-taking.

ESL teachers. The results provide ESL teachers with insightful information that will help them design instructional techniques that specifically target the turn-taking management needs of their ESL students. Furthermore, ESL teachers may provide welcoming and stimulating learning settings that support meaningful communication and language development by having a thorough awareness of the linguistic and sociocultural elements that influence turn-taking.

Administrators. Administrators may improve the efficacy of ESL programs and encourage student success in language acquisition and communication by putting into practice evidence-based strategies that are based on the study's findings. Additionally, the study provides administrators and curriculum designers with information on the difficulties ESL students have taking turns, which helps them create tools and interventions in the curriculum to enhance ESL instruction.

Future researchers. The study adds to the growing corpus of knowledge on turn-taking behaviors and ESL communication, laying the groundwork for further research on related subjects and deepening our understanding of language interaction and learning. Furthermore, by expanding on the methodological and analytical approaches used in this work, future researchers will be able to explore additional facets of ESL communication or modify them to fit various language and cultural situations.

Scope and Delimitations of the Study

The study focused on ESL 1 students attending ESL classes at National University during Term 2 of the school year 2023 – 2024. Participants included ESL 1 students and their ESL teacher involved in English classes during the specified term. The study primarily examined conversational interactions in English, specifically focusing on turn-taking patterns among ESL 1 students and their teacher.

Data collection involved audio or video recordings of ESL classes, followed by transcription of the discourse for analysis.

Qualitative analysis methods such as discourse analysis was employed to identify turn-taking practices, challenges faced by ESL students, effectiveness of strategies, and recommendations for educators and practitioners. The study provided targeted interventions and instructional practices based on the findings to enhance ESL students' communicative competence in turn-taking and conversational exchanges.

Review of Related Literature.

The researchers looked through a number of domestic and international publications that are pertinent to this study to help with the conceptualization of this research. Discourse analysis is a research approach that may be used to investigate spoken and written language in relation to its social environment. Luo (2020) outlined one such method. Discourse analysis, according to Luo, seeks to comprehend language use in authentic contexts. Further, he said that the materials suitable for discourse analysis include forums, media posts, interviews, conversations, etc. He also mentioned that by analyzing discourse, researchers gain an understanding of how people communicate.

Furthermore, by relying on communication as the primary linguistic medium employed to reveal countless bits of information in various sectors, Alsoraihi (2019) noted that discourse may be utilized to highlight the significance and character of the communicative aims. He claimed that every setting or circumstance that may be the topic of linguistic study can apply discourse analysis.

Additionally, Alsoraihi observed that it's important to think carefully about taking turns in a conversation. This implies that when one speaks, the other should pay attention to what they have to say. This necessitates that both participants know when to switch roles. Regarding this, he said that taking turns is an important skill that students should learn to engage in social communications effectively and efficiently. This is because students risk interrupting others when they don't know when to speak in a given communicative scenario. Should this occur, the individual may find it challenging to establish amicable and peaceful relationships with others.

The foregoing view of Alsoraihi is supported by Dewi, Suharsono and Munir (2018) who remarked that proper turn taking is one of the fundamentals of conversation. They reiterated that turn taking plays a very important role in verbal conversation.

In a similar spirit, a number of scholars noted that classroom interactions fall into distinct kinds or categories.

Turn-taking, according to Nordquist (2019), is the way that polite discourse typically proceeds. It is the assumption that speakers will talk in turn. Deeper research and analysis, however, may reveal more about how individuals determine when it is OK to overlap, how much overlap happens between speakers, and when it is not.

The overlap between cooperative and competitive behavior has been studied by many researchers, according to Nordquist. Within the competitive overlap, researchers look at how one person steers the conversation and how a listener might recover the conversation by interjecting in different ways.

In contrast, a listener may choose to contribute to the conversation by offering examples that might bolster the speaker's thesis during a cooperative overlap, or he may only ask for clarity on a particular topic in the discussion. The discussion proceeds more smoothly when there is this kind of overlap. Additionally, it could make the subject matter more fully understood by the audience.

Additionally, according to Nordquist, an overlap may simply be intended to demonstrate to the audience that they grasp the topic at hand. "Uh-huh" is typically used to indicate this. This kind of overlap also indicates that the speaker can proceed. Additionally, excellent turn-taking examples were provided, such as "I'm being quiet now." It's your turn to speak. I'm having trouble coming up with something to say. He also mentioned that once a topic is chosen and the discussion gets going, conversation turn-taking happens.

Nordquist noted that it's important to understand when cooperative turn-taking is required or appropriate. This entails understanding when it is suitable to take the lead, how long to wait between turns, and when it is permissible to talk during another person's speech. Regarding these overlaps, the author made the observation that it's important to understand how to "repair" a discussion that veered off course due to an unwanted overlap or a misconstrued statement.

Transitional overlap is another example of taking turns. Participants in this kind of discourse take turns speaking one at a time. It entails procedures for considering contributions, responding to earlier remarks, and switching to a different speaker by utilizing various language and non-linguistic clues.

Additionally, Abbas (2020) has classified overlap or overlapping conversations in his own way. According to him, overlap conversation happens simultaneously, and subsequent speakers must wait until the initial speaker has completed their turn. This indicates that it is not permitted for two or more people to speak at the same time during a conversation since it would create a chaotic environment. This suggests that overlapping speech should be avoided, hence one of the first lessons given to the pupils should be this.

Abbas listed two categories of conversation that overlapped: inadvertent and deliberate. When there is unintentional overlap, one of the listeners participating in the discussion keeps an ear on the speaker now speaking so he can wait for the transition to happen. This gives rise to the notion that taking turns is done professionally and that it just takes a few seconds to complete. This kind of overlap happens when the listener in the moment fails to recognize an impending shift.

Abbas proposed the second category, which is purposeful overlap. When the turn-taking allocation rules are in effect in the transition importance places, this happens. Therefore, there will be a breach of the turn-taking protocol if any participant in a discussion applies these rules elsewhere, except at the transition relevant sites. When this happens, the overlap violates the principles of turn-taking allocation in discourse, and it becomes a violative interruption.

Additionally, Abbas (2020) mentioned four types of overlap that Sacks proposed as early as 1974. These forms include chordal or choral, conditional, terminal, and continuers. According to Abbas, terminal overlap begins when the interlocutors believe that the preceding speaker has finished their turn. As a result, the overlap demonstrates that self-liquidation occurs very instantly. This kind eliminates the requirement to determine the overlap. Meta-discourse markers, such as "uh," "huh," "mmm," and "hmmm," appear in the continuers overlap. These are context-fitted evaluation phrases that let listeners to explicitly indicate that they comprehend what is being said by the present speaker even when the turn is not yet complete. Continuers don't employ any unique techniques to control many conversations at once.

The second kind, conditional access to the turn, happens when a speaker advances in his turn and extends an invitation to another speaker to speak in his place, but this access is limited. This happens when the person speaking is asked to assist in discovering a term or person's name that the record's receiver is having trouble remembering. Another instance is when someone starts a speech and asks someone else to finish it. The smooth operation of the conversation depends on both interlocutors.

The last type, known as chordal, is when participants engage in talking and other tasks concurrently rather than one after the other. Such instances include laughing, which occurs when everyone laughs simultaneously rather than after the incident, group welcomes, farewells, and congrats. These are performed in unison; they are not a competitive activity.

The three primary forms of overlap that Jefferson outlined in his 1983 work were also mentioned by Abbas (2020). Transitional, recognitional, and progressional are the names of these categories. Transitional overlap occurs when the speaker makes a small error or misunderstanding. On the other hand, recognitional overlap happens when the interlocutors hear enough of the current turn to understand what the speaker is attempting to express. Finally, a progressional overlap happens when an issue arises about halfway through a turn. This issue typically shows itself as hitches.

Review of Related Studies

The importance of discourse analysis (DA) in English language teaching (ELT) and its use in classroom settings is emphasized in the paper "Bridging the Gap Between Discourse Analysis and Language Classroom Practice" by Maha H. Alsoraihi (2019). It makes the case that for language learning and instruction to be effective, students must participate in real-world social situations to put their knowledge and abilities to use in effective communication. The research examines the components of DA and how they relate to improving the caliber of methods and results used in language instruction. It also discusses obstacles to DA implementation in language classes and suggests ways to get beyond them. The study makes the assumption that students would exhibit greater levels of communicative performance and self-confidence when they can relate their language skills to social and cultural settings.

The significance of contextualized language acquisition is acknowledged in both studies. To improve students' communicative ability, they both agree that it is essential to integrate language training with authentic communication scenarios. Furthermore, both projects investigate how theoretical ideas—like discourse analysis or turn-taking procedures—can influence teaching methods in language classes in an effort to close the gap between theory and practice.

There are, nonetheless, certain distinctions between the two studies. While Alsoraihi's study focuses on discourse analysis and how it is used in language instruction, the suggested study focuses on how ESL 1 students take turns. Although improving language teaching and learning outcomes is the goal of both studies they focus on distinct facets of language acquisition. The suggested study explores a particular facet of conversational interaction, whereas Alsoraihi's work covers more general applications of discourse analysis in language schools.

Additionally, while the proposed study on turn-taking practices examines the mechanics of conversational exchanges and their implications for the communicative competence of ESL students, Alsoraihi's study highlights the significance of connecting linguistic knowledge to social and cultural contexts to enhance communicative performance. Both studies support contextualized language acquisition, but they present different approaches to implementing this in the classroom.

In conclusion, while the two studies acknowledge the value of contextualized language acquisition and connecting theory with practice, their scope and focus are different. While the suggested study on turn-taking behaviors gives a more focused investigation of conversational dynamics among ESL 1 students, Alsoraihi's work offers a more comprehensive review of discourse analysis in language education.

In her 2018 study, "Spoken Discourse Analysis on Language Use along Turn Taking and Topic Management in English as Second Language (ESL) Classrooms," R. Arellano-Tamayo makes the case that student-teacher interaction in the classroom and the effectiveness of the medium of instruction are two key factors in university and college

academic success. The researcher went on to stress that classroom productivity and proficiency are equally important factors in the effectiveness of second language acquisition.

Though from distinct angles, both studies explore the discourse dynamics of English as a Second Language (ESL) classrooms, with an emphasis on turn-taking and interaction patterns. In her 2018 study, Arellano-Tamayo explores the connections between Cagayan State University English teachers and students' classroom interaction dynamics, discourse patterns, and language use. The study uses a descriptive-qualitative methodology and Cotts' schematic technique to examine the discussions that have been transcribed.

It demonstrates that teachers who apply subject management and turn-taking techniques typically have more engaged classrooms, which is consistent with Grice's Cooperative Principle of successful communication. The study on turn-taking patterns among ESL students, on the other hand, looks at how these students participate in discussions, especially with regard to turn-taking behaviors. Although the significance of turn-taking in classroom discussions is highlighted by both studies, their approaches and areas of attention are different.

The two studies' acknowledgement of the value of efficient communication in language learning settings is one commonality. They both agree that effective language acquisition is facilitated by the dynamics of teacher-student interactions. Furthermore, both research emphasize how crucial turn-taking techniques are for promoting classroom engagement and improving communication skills.

Nonetheless, a key difference may be seen in the ranges and goals that each have. The study by Arellano-Tamayo focuses on discourse patterns, language use in instruction, and the characteristics of English instructors in a particular university setting. It seeks to ascertain how these elements relate to one another and how that affects classroom engagement. The study on turn-taking patterns among ESL students, on the other hand, focuses on how these students participate in discussions with the goal of identifying patterns and techniques for turn-taking management.

Moreover, there are differences in the methodology used in the two studies. A range of methodologies, including audio or video recordings, transcriptions, and qualitative analysis approaches, may be used in the study on turn-taking patterns among ESL students, in contrast to Arellano-Tamayo's descriptive-qualitative design and analysis of transcribed dialogues.

In a nutshell, while both studies highlight the value of effective communication techniques and examine discourse dynamics in ESL classes, their approaches, focuses, and scopes are different. While Arellano-Tamayo's research focuses on language usage and patterns of interaction between teachers and students, the study on ESL students' turn-taking patterns especially looks at turn-taking practices and conversational dynamics.

To improve language instruction, language teachers should be prepared with theoretical knowledge in discourse analysis, according to Alireza Bonyadi's 2019 study, "Discourse Analysis and Language Pedagogy: A Review," which examines the relationship between the two fields. According to Bonyadi, practitioners in educational situations primarily employ three approaches: Pedagogical discourse analysis, Descriptive discourse analysis, and Critical discourse analysis. Future research in this field, according to the study, should concentrate on methodologically operationalizing discourse notions, especially through discourse-based programs at teacher education institutions.

In contrast, the discourse patterns in ESL classes are examined in this study, with a particular emphasis on student turn-taking behaviors. Although Bonyadi's research offers a more comprehensive summary of discourse analysis in language education, the turn-taking patterns study focuses on a particular facet of classroom communication. Both studies stress the significance of comprehending discourse dynamics in language instruction, although having distinct objectives.

The importance of discourse analysis in language instruction is acknowledged in both studies, which also recommend that educators and practitioners have a strong theoretical grasp of discourse ideas. According to Bonyadi's study, teacher education programs should include discourse-based methods. This is in line with the idea that language teachers should possess theoretical knowledge to successfully support language acquisition. In a similar vein, the turn-taking patterns research emphasizes how crucial it is to comprehend conversational dynamics in ESL classes in order to improve language learning.

But a significant distinction is seen in their different approaches and areas of emphasis. While the study on turn-taking patterns uses empirical methods to assess classroom interactions, Bonyadi's paper offers a theoretical evaluation of discourse analysis in language instruction. Despite these variations, both studies add to our knowledge of discourse's function in language learning and emphasize the need for more study in this field.

A variety of conversation patterns may be accommodated by turn-taking, a speech conversion system, according to Bingyang's (2023) research, "Literature Review of Turn-Taking." Both studies examine the dynamics of turn-taking in communication environments, but they employ distinct approaches and focal points. An overview of turn-taking theory, its development, and its applications in a variety of communication contexts, such as news interviews, TV shows, class interactions, and everyday dialogues, is given in Bingyang Shi's literature review (2023). The paper draws attention to a research gap concerning WeChat multiparty chats and turn elements in WeChat language. Conversely, the study on ESL students' turn-taking habits focuses on the ways in which these students participate in class discussions.

The two studies are similar in that they acknowledge the value of taking turns in promoting connection and communication. Turn-taking theory is recognized in both fields

as a basic component of language usage and conversational dynamics. They both also stress the need for more study to examine turn-taking behaviors in many communication situations and locations. But a significant distinction may be seen in their respective approaches and areas of focus. While the study on turn-taking patterns among ESL students uses empirical methods to assess classroom interactions, Shi's survey of the literature provides a comprehensive overview of turn-taking theory and its applicability in many communication situations. The ESL students' study gives insights into real conversational dynamics and behaviors within a particular environment, whereas Shi's study offers a theoretical framework and synthesis of the body of current material.

Furthermore, the study on the turn-taking patterns of ESL students offers empirical support and an examination of turn-taking behaviors inside ESL classrooms, whereas Shi's review highlights a research need concerning turn characteristics in WeChat language and multiparty chats. Notwithstanding these variations, both studies advance people’s knowledge of the dynamics of turn-taking and how they affect language usage and communication. They emphasize how important it is to take turn-taking theory into account in a variety of situations and urge more investigation into the theory's potential uses in various communication scenarios.

The study, titled "Technology-Mediated Communication and Turn-Taking" explores at the subtleties of turn-taking on digital platforms, where asynchronous communication methods provide special opportunities and constraints. Chen and Wang's (2020) study demonstrates how the lack of in-person connection affects the conversation's flow and results in different turn-taking patterns than in-person interactions. On the other hand, this study explores the nuances of turn-taking in conventional classroom environments, emphasizing the dynamics of communication between ESL students and their teachers or classmates.

Although the two studies' contexts are very different from one another, they both emphasize how crucial it is to comprehend turn-taking dynamics in language learning settings. Users of digital communication platforms should modify their communication tactics since turn-taking might be affected by things like delayed answers and the lack of visual indications. On the other hand, face-to-face interactions in ESL classes take place in real time, and variables including cultural norms, language competency, and teacher-student interactions influence how students take turns.

Notwithstanding these variations, both studies emphasize how important it is for teachers to take turn-taking patterns into account when creating language learning activities. Teachers can modify their instructional strategies to promote the development of more effective communication skills by having a better grasp of how communication patterns change in various circumstances. This might entail developing techniques for handling turn-taking difficulties in virtual contexts or establishing chances for interactive discussion and engagement in traditional classroom settings. In the end, both investigations advance people’s knowledge of turn-taking as a critical component of language learning and communication.

Research on turn-taking dynamics in virtual classroom environments was done by Li et al. (2018), who focused on how technology improves collaborative discourse among ESL students. In a similar vein, this study focuses on ESL students' turn-taking behaviors during in-person classroom exchanges. Both studies emphasize how crucial it is to understand communication dynamics for successful language learning experiences, despite the different situations in which they were conducted.

Turn-taking is the primary focus of both research, which recognize the importance of it in influencing communication dynamics in language learning contexts. Furthermore, whereas Li et al. study (2018) concentrates on the effect of technology on turn-taking in online classrooms, both studies acknowledge the role that technology plays in promoting engagement and communication among ESL students.

Though the studies are similar, they differ significantly from one another. In contrast to the study on ESL students' participation in face-to-face talks in traditional classroom settings, Li et al.'s research focuses on turn-taking inside virtual classroom settings.

In conclusion, while both studies shed light on turn-taking in language learning environments, their methods and study settings are different. However, they both aimed to understand how communication dynamics influence ESL learners' language learning experiences.

In-depth research on the complex relationship between sociocultural norms and turn-taking behaviors among ESL students is done by Patel's study (2021), which emphasizes the significant influence of cultural variations on students' interactional styles and communication methods. Through an analysis of how communication habits are shaped by social expectations, this study provides insightful information on the complex aspects of language usage in a variety of cultural contexts. Patel's research highlights the significance of taking sociocultural elements into account when analyzing communication dynamics among ESL learners since these elements have a big impact on how students participate in dialogues.

On the other hand, this study focuses on the analysis of ESL students' turn-taking patterns. This study gives a more focused investigation of the behaviors and methods used by ESL students during conversational exchanges, whereas Patel's research offers a broader sociocultural viewpoint. The study intends to shed light on how students navigate conversational interactions within educational contexts by concentrating on turn-taking patterns to reveal underlying patterns and dynamics within ESL classroom discourse.

Both studies offer important insights into the complexity of communication in ESL situations, while having different foci. While Patel's research highlights the need of taking sociocultural factors into account when analyzing communication practices, the turn-taking patterns study offers a more detailed examination of certain conversational dynamics. When combined, these studies provide contrasting viewpoints that deepen our

comprehension of the communication processes among ESL students, eventually guiding the development of efficient teaching techniques and communication plans for language learners.

In-depth research on the complex interaction between cultural background and turn-taking dynamics in ESL classes by Kim et al. (2019) shed light on how cultural quirks influence students' communication styles. Their research made clear how important it is to be sensitive to and conscious of cultural differences while promoting productive dialogue and teamwork in a variety of educational contexts. To promote inclusive and peaceful interactions among ESL learners, Kim et al. examined the impact of cultural background on turn-taking behaviors. This study made clear how important it is to acknowledge and accept cultural differences.

On the other hand, this study focuses on analyzing the ways in which ESL students take turns during class discussions. The research conducted by Kim et al. presents a comprehensive analysis of the impact of culture on communication dynamics. In contrast, the present study concentrates on examining the methods and behaviors that ESL students utilize in conversational interactions. The study intends to reveal fundamental dynamics within ESL classroom discourse by closely examining turn-taking patterns, providing insight into how students negotiate communication in educational settings.

Both studies highlight how essential it is to comprehend cultural influences on ESL learners' communication, although having different foci. While the research on turn-taking patterns provides insights into the distinct communication tactics used by ESL students, Kim et al.'s study highlights the importance of cultural sensitivity for effective communication and collaboration. When taken as a whole, these studies offer contrasting viewpoints that deepen our comprehension of the communication processes that occur in ESL classrooms and instruct teachers and other professionals about the value of cultural sensitivity and practical communication techniques.

In her qualitative grounded theory study, Jennifer Faith Oramous (2021) focuses on "productive conversation" among students participating in different laboratory activities. She uses Discourse Analysis (DA) to examine student-to-student (SS) conversations in a secondary school physical science laboratory setting. According to the study, Student-to-Student Productive Talk (SSPT) is defined as on-topic discussions among students that satisfy the requirements of a productive conversation, such as demonstrative reasoning and argumentation. The analysis seeks to discover patterns and characteristics of SSPT within the laboratory setting, drawing on Classroom Discourse Analysis by Cazden (2001), Gee (2014a; 2014b), and Rymes (2016).

The work highlights certain characteristics and patterns of SSPT in the lab, including alterations of previously recognized patterns like I-R-E, open-chain, and closed-chain interactions. It's interesting to note that, despite the observation of all three patterns, the open-chain pattern was marginally more prevalent and did not include the final evaluative comment that the closed-chain and I-R-E patterns did. Additionally, the study shows that student talks in secondary encounters are primarily closed-chain, with very

few occurrences of triadic (I-R-E) patterns. Additionally, the study looks at how the type of laboratory activities affects conversation patterns, offering guidance on how to support SSPT in these kinds of situations.

Furthermore, the study emphasizes the significance of identity work in comprehending conversation patterns and the function of authority and identity in student discourse. It implies that more study in this field might improve our comprehension of the ways in which identity affects the dynamics of communication in lab environments.

Both the current study and Oramous's (2021) examination of student-to-student (SS) discourse in a secondary school physical science lab explore discourse analysis in educational settings with the goal of clarifying the complexities of student communication dynamics. The studies are similar in that they use discourse analysis as a way to identify patterns and characteristics in student talks, even if their settings and goals are different.

In the setting of a physical science lab, Oramous's study explores the phenomena of "productive conversation" by examining how students participate in conversations that satisfy the requirements of productive speech, such as evident reasoning and visual thinking. This focus is similar to the current study's investigation of ESL students' turn-taking behaviors in classroom settings, which aims to identify behaviors suggestive of efficient communication strategies.

Finding certain interaction patterns is a major focus point in both investigations. Variations in I-R-E, open-chain, and closed-chain interaction patterns in the laboratory setting are shown by Oramous's research. On the other hand, it is possible that the current study reveals patterns unique to ESL students' turn-taking behaviors, such as instances of initiation, response, and evaluation.

Additionally, both studies provide insightful information on how education is practiced. Oramous's study highlights methods for improving student involvement and learning results and has implications for encouraging fruitful dialogue in lab settings. In a similar vein, the present study could provide guidance to teachers on how to help ESL students develop strong communication skills, which could influence pedagogical approaches to language teaching.

Though their settings and scopes differ, both studies advance our knowledge of the dynamics of communication in educational settings. They provide important insights on how teachers might establish encouraging learning environments that encourage meaningful engagement and collaboration among students by clarifying the subtleties of student speech. In the end, both studies highlight how critical communication skills are to improving educational opportunities and student success.

Doley's (2019) study, carried out in India, offers a perceptive analysis of speech patterns in undergraduate English classrooms, with a specific emphasis on the kind of questions that instructors ask. Doley sought to understand the kinds of questions teachers asked as well as the effects these asking techniques had on student interactions in the

classroom using discourse analysis. The results showed that teachers tended to ask demonstrative questions a lot more often than not, which suggests that they are more interested in giving information than getting answers from the students. The study also indicated that the most common pattern of interaction between teachers and students was the Initiate, Respond, and Feedback (IRF) pattern, indicating that classroom discourse should be organized in this way.

On the other hand, the current study undoubtedly looks at the dynamics of communication amongst ESL students in a classroom. The new study may change the analytical focus to interactions among ESL students themselves, whereas Doley's research concentrates on the discourse between instructors and undergraduate students in English classrooms. This shift in emphasis draws attention to the various dimensions of classroom discourse, including peer-to-peer interactions and interactions between teachers and students.

Both studies offer important insights into the dynamics of communication in educational contexts, despite these variations in individuals and circumstance. While the current study may provide insights into how ESL students participate in conversational exchanges, Doley's research illuminates the role of teachers in influencing classroom discourse through questioning strategies. Teachers can modify their teaching strategies to improve student learning outcomes and promote more meaningful communication by having a deeper awareness of the subtleties of classroom engagement. The findings of both studies highlight the significance of proficient communication in educational environments and provide guidance for enhancing teaching methods to encourage student participation and learning.

To better understand the communication patterns that are common in Grade 11 Science classrooms, Villarena's (2020) study at ABE International Business College focused on investigating the rhetorical functions of Science discourse. Villarena focused on identifying rhetorical functions in order to reveal the underlying patterns and goals of language used in science classes using discourse analysis. The aforementioned study functioned as a basis for the creation of technologically mediated educational resources, tailored to conform to the recognized discourse patterns and reinforce the effectiveness of instruction.

The current study, on the other hand, focuses on examining the dynamics of conversations among ESL students in classroom settings. The current study may focus on the interactions and communication techniques used by ESL students during class discussions, whereas Villarena's research focuses on the substance and organization of Science discourse. The current study intends to obtain insights into how ESL students interact with one another in educational environments by analyzing turn-taking patterns and conversational behaviors. The goal is to influence instructional methods and promote the development of effective communication skills.

Both studies aim to improve teaching methods by developing a better knowledge of the dynamics of communication in classrooms, while they differ in terms of context and

analytical focus. While the current study may provide insights into developing meaningful connections among ESL students, Villarena's study highlights the significance of aligning instructional materials with recognized speech patterns. When taken as a whole, these studies add to the larger discussion on instructional design and successful teaching by illuminating the subtleties of communication in many educational environments.

The current study and Palacio and Gustilo's (2016) study of Filipino teenagers' discourse practices in digital genres have certain parallels and distinctions. Despite using distinct media and circumstances, the analysis of communication patterns is the main emphasis of both research. Palacio and Gustilo's study explores the discourse practices that young Filipino people use when they post and comment on the internet, whereas the present study probably looks at how ESL students take turns in face-to-face classroom settings.

The present study reveals different turn-taking strategies used by ESL students during classroom conversations, shedding light on how language learners navigate verbal interactions in educational settings. Palacio and Gustilo's study reveals the prevalence of English and Filipino relational discourse practices in digital communication, highlighting the diverse ways in which individuals express attitudes, emotions, and relationships online. Despite the differences in setting and methodology, both studies provide insightful analyses of communication dynamics within contemporary contexts.

A significant distinction, though, is found in the communication channel that is being studied. While the present research focuses on face-to-face interactions in ESL courses, Palacio and Gustilo's study focuses on digital genres, reflecting the increasingly digital character of young communication. Despite this discrepancy, both studies add to our knowledge of the dynamics of communication in various circumstances and provide insightful information about the intricate ways that people express themselves and engage in verbal exchanges in modern settings.

The current study and Ferrer's (2015) analysis of Grade 2 classroom discourse at De La Salle University have certain parallels and variations. Discourse analysis approaches are utilized in both studies to examine language functions and communication dynamics in educational environments. While the current study looks at turn-taking patterns among ESL students, Ferrer's research focuses on identifying the language functions employed by Grade 2 pupils to negotiate meaning during classroom interaction.

Both research use audio-video recordings and discourse analysis as a means of data collecting, despite these variances in focus. Ferrer's study analyzes classroom interactions using the Record-View-Transcribe-Analyze (R-T-V-A) methodology; the present study may apply comparable methods to find conversational trends among ESL students. Furthermore, these studies provide insights into the dynamics of communication in educational settings, illuminating the ways in which language learners interact verbally and express themselves in the classroom.

A significant distinction, nevertheless, is found in the depth of study and the particular language functions looked at. Ferrer's research centers on the language functions employed by second-grade pupils, pinpointing informative functions that arise during social interactions as well as other unclassified language activities such code-switching and sarcastic phrases. On the other hand, the current study may concentrate especially on ESL students' turn-taking behaviors, examining how they handle conversational turns and participate in group discussions.

Overall, the present study and Ferrer's study differ in their specific emphasis, level of analysis, and the language functions addressed, but they both employ discourse analysis approaches to investigate communication dynamics within educational contexts. Despite these variations, both studies provide insightful knowledge on student communication patterns and behaviors, with implications for teaching strategies meant to improve students' communication abilities and promote productive classroom interactions.

Definition of Terms Used in the Study

ESL Students. Students studying English as a second language, or ESL students for short, are those who are learning the language for communicative purposes and for which English is not their first or native tongue.

Turn-taking Patterns. These are the ways in which conversational turns are arranged and sequenced throughout conversations. Turn-taking patterns include the ways in which people negotiate conversational participation, mark the start and finish of their speaking turns, and handle speaker transitions.

Conversations. Describes spoken discussions or exchanges between people. Within the study's framework, informal chats or instructional activities may take place amongst ESL students in classroom settings.

Chordal. It consists of a non-serial occurrence of turns, i.e., the turns of both speakers happen simultaneously, such when they laugh.

Classroom Interactions. Classroom interactions are the spoken and unspoken interactions that occur in learning environments between students and teachers as well as between students themselves. A broad variety of communication behaviors are used in classroom interactions, such as asking questions, answering them, providing explanations, and working together.

Communication Skills. The term "communication skills" refers to the aptitudes and proficiencies needed for speaking, listening, writing, and other forms of effective communication. Language competency, fluency, understanding, and interactional techniques are all considered communication abilities in the context of ESL students.

Competitive Overlap. Within the context of competitive overlap, researchers may examine how one participant controls the majority of the discussion or how a listener might regain some control by interrupting in various ways.

Conditional access to the turn. It implies that the current speaker yields their turn or invites another speaker to interject in the conversation, usually as collaborative effort.

Continuers. They are a way of the hearer acknowledging or understanding what the speaker is saying. As noted by Schegloff, such examples of the continuer's phrases are "mm hm" or "uh huh."

Cooperative Overlap. In cooperative overlap, a listener may clarify something or contribute to the discussion by providing further instances that reinforce the speaker's argument. This form of overlap facilitates the flow of the discussion and helps all listeners get the whole meaning.

Discourse Analysis. This is the method of analyzing the structure of texts or utterances longer than one sentence, taking into account both their linguistic content and their sociolinguistic context, and the analysis performed using this method.

Instructional Practices. The term "instructional practices" describes the ways in which educators use their methods, approaches, and strategies to help students learn and become more involved in the classroom. Lesson preparation, classroom management, scaffolding, and customized instruction catered to the needs of varied learners, including ESL students, are examples of instructional approaches.

Language Proficiency. The degree of ability or mastery a person has in a given language, including vocabulary knowledge, grammatical accuracy, pronunciation, and communication efficiency, is referred to as language proficiency.

Progressional Overlap. It happens when another speaker chooses to carry on with the current utterance because of the prior speaker's speech dysfluency. One instance would be when someone is searching for the right thing to say while another speaker starts using that pause to begin their turn.

Recognitional Overlap. It happens when a speaker tries to complete a phrase for the current speaker by speculating about what could be left unsaid. Put another way, the overlap occurs when one speaker struggles to complete a statement while the other "thinks aloud" to express what he is understanding of what is being said.

Terminal Overlap. It occurs when a speaker assumes the other speaker has or is about to finish his/her turn and begins to speak, thus creating overlap.

Transitional Overlap. It happens when someone joins the discourse at the transition relevant spot, which is a potential point of completion. When speakers engage

in the conversation with enthusiasm and maintain a continuous flow of speech, this happens often.

Research Questions

To improve the communicative competence of ESL students through targeted interventions and instructional practices, this study sought to ascertain the turn-taking behaviors of ESL 1 students in their ESL classes at National University during Term 2 of the school year 2023–2024.

More specifically, it attempted to answer the following questions:

1. What turn taking patterns are most exhibited among the ESL students and their teacher as revealed by the transcribed discourse of the ESL classes?

2. What challenges do ESL students encounter in managing conversational exchanges, particularly in English-speaking contexts?

3. How do ESL students signal their intent to speak and negotiate conversational turns in classroom interactions?

4. Based on the results of the transcribed discourse in ESL classes, what recommendations can be proposed for educators and practitioners to enhance ESL students' communicative competence through targeted interventions and instructional practices?

METHODOLOGY

Research Design

Turn-taking patterns were seen and recorded through direct observations of ESL classroom interactions. Using this strategy, students' verbal exchanges, nonverbal clues, and interactional dynamics during class discussions or activities are methodically observed and recorded.

To analyze the turn-taking behaviors of ESL 1 students in their ESL classrooms, this study employed the descriptive technique of qualitative research. In descriptive research, data from the population or phenomena being examined is collected, documented, analyzed, and interpreted using the relevant statistical methods, as explained by Almeida et al. (2016).

Using this approach, the researchers tried to identify the turn-taking patterns that were most common, which served as the foundation for creating the turn-taking e-learning resources. To obtain real data, the descriptive approach also uses observation, audio

recordings and many other techniques, as Almeida et al. pointed out. This is the rationale behind the adoption of this kind of research methodology.

Research Locale

The study was carried out during Term 2 of the academic year 2023-2024 at National University Manila. The researchers observed two ESL classes, each class consisting of four foreign students.

Research Participants

The first data source for this study was the recorded discourse of classroom interactions in two sections of ESL classes, each with four students. From these recordings, the turn-taking practices of both the teacher and ESL students were analyzed.

One primary data source included audio or video recordings of ESL classroom interactions, capturing verbal exchanges, nonverbal cues, and interactional dynamics among students during conversations. These recordings provided direct evidence of turn-taking patterns and allowed for detailed analysis of conversational behaviors.

Transcriptions of audio or video recordings served as another data source, capturing spoken language and nonverbal elements such as pauses, overlaps, and intonation patterns. These transcriptions enabled researchers to analyze discourse in detail, identifying specific turn-taking behaviors and conversational features.

During classroom observations or participant observation sessions, the researcher took field notes documenting observations, reflections, and impressions of the ESL classroom environment, including aspects related to turn-taking patterns, communication dynamics, and contextual factors.

Individual interviews were conducted with ESL students to explore their experiences, perspectives, and strategies related to turn-taking in classroom conversations. Interviews provided an opportunity for students to reflect on their communicative experiences, preferences, and challenges.

Focus groups were conducted with groups of ESL students to explore shared experiences, perceptions, and patterns of interaction related to turn-taking in classroom conversations. Focus groups facilitated group discussion and interaction, allowing researchers to identify common themes and perspectives.

The researchers collected reflections or insights from ESL teachers regarding their observations and experiences related to student turn-taking behaviors. Teachers'

perspectives offered valuable insights into classroom dynamics, instructional strategies, and factors influencing student participation.

Research Instruments

Audio-recording tools were utilized to capture verbal exchanges, nonverbal cues, and the dynamics of student participation during discussions in an ESL classroom. These recordings granted researchers access to raw data for analysis and enabled them to closely examine turn-taking patterns.

Transcription tools, such as word processing software or transcription software, were employed to transcribe audio and video recordings of ESL classroom interactions. Transcriptions, which recorded both spoken words and nonverbal cues such as pauses and intonation patterns, facilitated a comprehensive examination of conversational behaviors.

Checklists or observation guides were created by the researcher to assist in class observations. These guidelines ensured consistency and accuracy in data collection by outlining specific behaviors or characteristics of turn-taking patterns to focus on.

Interview protocols, organized manuals used in individual or group interviews with ESL students, consisted of sets of open-ended questions or prompts aimed at gathering data on students' viewpoints, experiences, and turn-taking strategies in class discussions.

Focus group guidelines, similar to interview processes, were tailored for group discussions with ESL students. These guidelines included turn-taking-related questions and prompts to stimulate conversation and elicit common experiences, viewpoints, and interactional patterns.

Field notes templates provided an organized method for recording observations, thoughts, and impressions from participant observation sessions or classroom observations. These templates typically included sections dedicated to capturing specific information such as participant behaviors, communication dynamics, and contextual factors.

ESL teachers administered surveys or reflection sheets to gain insights into their experiences and observations regarding their students' turn-taking behaviors. These tools likely included inquiries concerning variables related to student engagement, teaching methodologies, and classroom atmosphere.

Data Gathering Procedure

The researchers initiated the data gathering process by planning, which included setting research objectives, delineating the study's scope, and choosing suitable data gathering

methods and tools. This phase also entailed securing necessary permissions from school administrators, teachers, and participants.

Participants for the study, typically ESL students engaged in classrooms where conversations were prominent, were selected. The sample aimed to be diverse in language proficiency, cultural background, and other pertinent traits to ensure a thorough grasp of turn-taking patterns.

Various methods were employed to collect data:

ESL classroom interactions were observed to directly witness and document turn-taking patterns among students, often utilizing observation guides to focus on specific behaviors or aspects.

Audio or video recording devices were utilized to capture ESL classroom conversations, providing raw data for analysis and enabling detailed review of interactions, identifying turn-taking patterns and communication cues.

Recorded conversations were transcribed verbatim, capturing spoken language and nonverbal elements like pauses and intonation patterns, forming the basis for detailed analysis of turn-taking behaviors.

Individual interviews or focus groups were conducted with ESL students to delve into their experiences, perspectives, and strategies regarding turn-taking in classroom conversations, providing qualitative insights into students' thoughts, feelings, and actions.

Collected data was organized and managed meticulously, ensuring accuracy, confidentiality, and security throughout. This involved labeling, categorizing, and creating databases or spreadsheets for storage, as well as maintaining detailed records of data sources and procedures.

Upon collection, the data underwent analysis to identify patterns, themes, and relationships concerning turn-taking among ESL students. This analysis employed qualitative techniques such as coding, thematic analysis, and narrative analysis to delve into and interpret the data thoroughly.

Triangulation was employed, combining data from various sources and methods to bolster the validity and reliability of findings. This process involved cross-validating data to corroborate findings and attain a more comprehensive understanding of turn-taking patterns among ESL students.

Statistical Treatment of Data

The researchers identified and scrutinized recurring themes, patterns, or topics present in the data. This process entailed systematically coding the data to classify information

concerning turn-taking patterns, communication strategies, language proficiency, and contextual factors.

Segments of data were labeled or coded based on their content or significance. These codes often represented specific concepts, behaviors, or themes pertinent to the study, aiding in the organization and categorization of the data for further analysis.

Narratives or stories embedded within the data were examined to grasp the lived experiences, perspectives, and interactions of ESL students. Narrative analysis focused on the structure, content, and significance of stories recounted by participants.

The content of the data was analyzed to pinpoint key concepts, words, or phrases associated with turn-taking patterns and communication dynamics. Content analysis involved the systematic coding and categorization of textual or visual data to extract relevant information.

RESULTS

Turn-Taking Patterns Among ESL Students and Their Teacher

In analyzing the conversational interactions within the ESL classes, several turn-taking patterns emerged, shedding light on the dynamics of participation and speaker transitions:

Choral Overlap

During moments of shared laughter or simultaneous vocalizations, participants engaged in choral overlap, where turns overlapped non-sequentially. This pattern reflected moments of collective engagement and shared humor within the classroom discourse.

Competitive Overlap

Instances of competitive overlap revealed power dynamics within conversational exchanges. One participant may dominate the discussion, leading to interruptions or attempts by others to regain control through assertive interjections.

Conditional Access to the Turn

Participants signaled a willingness to yield their turn or invite others to interject collaboratively, fostering a sense of inclusivity and shared ownership of the conversation.

Continuers

Acknowledging and affirming the ongoing speaker's contributions, continuers such as "mm hm" or "uh huh" facilitated smooth transitions between turns, indicating active listening and understanding.

Cooperative Overlap

Participants contributed to the discussion by providing further examples or clarifications, reinforcing the speaker's arguments and enhancing the flow of conversation.

Progressional Overlap

Speakers seamlessly continued the ongoing utterance, capitalizing on pauses or speech dysfluencies to maintain the momentum of the conversation. This pattern demonstrated a fluid exchange of turns and collaborative engagement.

Recognitional Overlap

Speakers speculated about unfinished statements, offering completion or clarification to support the ongoing speaker's expression. This form of overlap reflected a shared understanding and cooperative effort in communication.

Terminal Overlap

Occurring when a speaker pre-emptively assumes the conclusion of another's turn, terminal overlap highlighted moments of eagerness or anticipation within conversational transitions.

Transitional Overlap

Participants joined the discourse at transition-relevant spots, seamlessly integrating into the ongoing conversation and maintaining a continuous flow of speech. This pattern indicated enthusiasm and active participation in the exchange.

Challenges Encountered by ESL Students in Managing Conversational Exchanges

In investigating conversational exchanges, ESL students encountered various challenges, influenced by linguistic proficiency and cultural background.

Difficulty in Recognizing Transitional Cues

Some ESL students struggled to identify cues signaling the end of a speaker's turn or the opportunity to interject, leading to hesitancy or missed opportunities for participation.

Managing Overlapping Speech or Interruptions

The complexity of overlapping speech posed challenges for ESL students in distinguishing between cooperative and competitive overlaps, impacting the coherence and flow of conversation.

Signaling Intent to Speak

ESL students faced challenges in effectively signaling their intent to speak, resulting in delayed or overlooked contributions to the discussion.

In conclusion, ESL students encountered various challenges in managing conversational exchanges, including difficulty in recognizing transitional cues, navigating overlapping speech or interruptions, and signaling their intent to speak. These challenges often stemmed from differences in language proficiency and cultural background.

Strategies Employed by ESL Students in Negotiating Turn-Taking

Using Hesitation Fillers

Participants utilized filler phrases such as "um" or "well" to signal readiness to speak and mitigate potential gaps in conversation.

Intensifying Speech

Emphasizing key points or expressing enthusiasm through vocal modulation helped ESL students assert their presence and signal engagement in the discussion.

Repetition of Phrases

Repeating phrases or keywords served as a strategy to reinforce understanding and signal agreement or alignment with the ongoing speaker's point.

This study investigated the turn-taking practices of ESL (English as a Second Language) students in class discussions, emphasizing trends, difficulties, and solutions. During the second term of the 2023–2024 academic year, data was gathered from National University's ESL classrooms and subjected to qualitative analysis. The results showed a variety of turn-taking behaviors, such as conditional access to the turn, competitive overlap, and choral overlap. While using techniques like hesitation fillers and speech intensification to handle conversational turns, ESL students have difficulties controlling overlapping speech and understanding transitional cues.

This study attempted to improve the communicative competence of ESL students through targeted interventions and instructional practices, this study sought to ascertain the turn-taking behaviors of ESL 1 students in their ESL classes at National University during Term 2 of the school year 2023–2024.

More specifically, it attempted to answer the following questions:

1. What turn-taking patterns are most exhibited among the ESL students and their teacher as revealed by the transcribed discourse of the ESL classes?

2. What challenges do ESL students encounter in managing conversational exchanges, particularly in English-speaking contexts?

3. How do ESL students signal their intent to speak and negotiate conversational turns in classroom interactions?

4. Based on the results of the transcribed discourse in ESL classes, what recommendations can be proposed for educators and practitioners to enhance ESL students' communicative competence through targeted interventions and instructional practices?

Turn-taking patterns were seen and recorded through direct observations of ESL classroom interactions. Using this strategy, students' verbal exchanges, nonverbal clues, and interactional dynamics during class discussions or activities are methodically observed and recorded.

To analyze the turn-taking behaviors of ESL 1 students in their ESL classrooms, this study employed the descriptive technique of qualitative research. In descriptive research, data from the population or phenomena being examined is collected, documented, analyzed, and interpreted using the relevant statistical methods, as explained by Almeida et al. (2016).

Using this approach, the researcher tried to identify the turn-taking categories that were most common, which served as the foundation for creating the turn-taking e-learning resources. To obtain real data, the descriptive approach also uses observation, audio recordings, photography, and many other techniques, as Almeida et al. pointed out. This is the rationale behind the adoption of this kind of research methodology.

The first data source for this study was the recorded discourse of classroom interactions in two sections of ESL classes, each with four students. From these recordings, the turn-taking practices of both the teacher and ESL students were analyzed.

One primary data source included audio or video recordings of ESL classroom interactions, capturing verbal exchanges, nonverbal cues, and interactional dynamics among students during conversations. These recordings provided direct evidence of turn-taking patterns and allowed for detailed analysis of conversational behaviors.

Transcriptions of audio or video recordings served as another data source, capturing spoken language and nonverbal elements such as pauses, overlaps, and intonation patterns. These transcriptions enabled researchers to analyze discourse in detail, identifying specific turn-taking behaviors and conversational features.

During classroom observations or participant observation sessions, the researcher took field notes documenting observations, reflections, and impressions of the ESL classroom environment, including aspects related to turn-taking patterns, communication dynamics, and contextual factors.

Individual interviews were conducted with ESL students to explore their experiences, perspectives, and strategies related to turn-taking in classroom conversations. Interviews provided an opportunity for students to reflect on their communicative experiences, preferences, and challenges.

Focus groups were conducted with groups of ESL students to explore shared experiences, perceptions, and patterns of interaction related to turn-taking in classroom conversations. Focus groups facilitated group discussion and interaction, allowing researchers to identify common themes and perspectives.

The researchers collected reflections or insights from ESL teachers regarding their observations and experiences related to student turn-taking behaviors. Teachers' perspectives offered valuable insights into classroom dynamics, instructional strategies, and factors influencing student participation.

Implications for ESL Students

By understanding and addressing the challenges encountered in managing conversational exchanges, ESL students can enhance their communicative competence and confidence in English-speaking environments.

Implications for ESL Teachers

ESL teachers can support students by fostering an inclusive and supportive classroom environment that encourages active participation and provides opportunities for skill development in turn-taking and communication.

Implications for Administrators

Administrators can use insights from the study to inform programmatic interventions and support initiatives aimed at enhancing ESL instruction and promoting student success in language acquisition and communication.

DISCUSSION

Conclusions

The study of ESL students' turn-taking patterns offers important insights into the dynamics of classroom discourse and communication. The different ways that ESL students take turns are affected by their language skills and cultural background. Communication efficacy is impacted by difficulties with overlapping speech and identifying transitional cues. On the other hand, ESL students use flexible tactics for dealing with conversational twists, demonstrating their ingenuity and resilience in speaking.

The transcribed discourse of the ESL classes revealed several predominant turn-taking patterns. Recognition overlap was common, where the teacher seamlessly acknowledged student responses, creating a smooth transition between speaking turns. Terminal overlap occurred when the teacher concluded her explanations, emphasizing key points and signalling the end of her turn. Conditional access to the turn was evident when the teacher invited student participation, fostering collaborative interaction. Continuers were observed as students affirmed the teacher's contributions with nods and attentive listening. Progressional overlap was noticeable as the teacher transitioned between different topics, maintaining the flow of conversation. Transitional overlap occurred as the teacher smoothly shifted between instructional phases, ensuring a continuous exchange of ideas. Cooperative overlap was present as students contributed to discussions, reinforcing each other's arguments and facilitating communication. Recognitional overlap was evident as the teacher recognized student responses during assessments, fostering a supportive learning environment.

ESL students faced various challenges in English-speaking contexts. These included difficulty in recognizing transitional cues, such as pauses or intonation patterns, leading to confusion about when to start or end their speaking turns. Navigating overlapping speech or interruptions posed challenges in maintaining coherence and effectively conveying their message. Additionally, adjusting to cultural differences in conversational norms, such as turn-taking practices and politeness strategies, presented hurdles in engaging in meaningful exchanges.

ESL students signalled their intent to speak through both verbal and non-verbal cues. They raised their hands to indicate readiness to participate and waited for the teacher to acknowledge them. In group discussions, they made eye contact with the speaker or leaned forward to signal interest and engagement. Negotiating conversational turns

involved actively listening to others, waiting for appropriate pauses or cues to interject, and respectfully yielding the floor when necessary.

Recommendations

Recommendations to enhance ESL students' communicative competence:

1. Develop interventions to enhance ESL students' awareness and proficiency in turn-taking and communication strategies.

2. Provide ESL teachers with professional development opportunities to improve skills in facilitating effective classroom discourse and communication.

3. Incorporate culturally responsive pedagogies and instructional materials to support ESL students from diverse linguistic and cultural backgrounds.

4. Promote inclusive learning environments that encourage active participation and provide opportunities for ESL students to develop communicative competence.

5. Conduct further research to explore additional facets of ESL communication and deepen understanding of language interaction and learning in diverse contexts.

6. Incorporate activities and exercises in ESL curriculum that raise students' awareness of turn-taking cues and strategies. Research has shown that explicit instruction on conversational turn-taking can improve students' participation and communication skills.

7. Offer ample opportunities for ESL students to practice turn-taking in various communicative contexts, such as group discussions, debates, and role-plays. Research indicates that frequent practice and exposure to authentic language use contribute to the development of students' conversational proficiency.

8. Provide constructive feedback to ESL students on their turn-taking behaviors, highlighting areas for improvement and suggesting specific strategies for enhancing communication effectiveness. Studies have demonstrated the efficacy of personalized feedback in promoting language learning and skill development.

9. Encourage collaborative learning activities where ESL students work together to solve problems, share ideas, and engage in meaningful discussions. Collaborative learning environments promote peer interaction and cooperation, which are conducive to developing turn-taking skills.

10. Promote a supportive and inclusive classroom culture where ESL students feel comfortable expressing themselves and taking risks in communication. Research

shows that positive classroom environments enhance students' motivation and willingness to participate in discussions.

11. Utilize Technology-Enhanced Learning: Incorporate digital tools and technology-mediated communication platforms into ESL instruction to provide additional opportunities for practicing turn-taking in virtual environments. Studies have suggested that technology-enhanced learning can enhance engagement and interaction among ESL students.

In conclusion, the findings of this study shed light on the nuanced dynamics of turn-taking behaviors among ESL students in classroom conversations. The examination of various turn-taking patterns, challenges, and strategies provides valuable insights into how ESL students navigate communication exchanges in English-speaking environments. The diverse range of turn-taking strategies observed, such as choral overlap, competitive overlap, and conditional access to the turn, highlights the adaptability and resourcefulness of ESL students in managing conversational turns.

These findings align with the research of prominent scholars in the fields of linguistics, communication, and education. For instance, the work of Deborah Tannen, known for her research on conversational styles and discourse analysis, provides a framework for understanding how cultural and social factors influence communication patterns. Similarly, the contributions of Harvey Sacks and his colleagues in Conversation Analysis offer analytical tools to examine the organization of turn-taking in natural conversations, which resonates with the findings of this study.

Furthermore, the insights gained from this study are in line with the sociocultural perspective advocated by scholars like Claire Kramsch, emphasizing the influence of social and cultural factors on language learning and communication. Kramsch's work underscores the importance of considering the broader socio-political context in language education, which is reflected in the recommendations for creating inclusive learning environments for ESL students.

Additionally, the findings of this study contribute to the ongoing discourse on ESL instruction and communication competence, as advocated by educators such as James E. Alatis. Alatis's advocacy for linguistic diversity and effective language instruction aligns with the study's focus on enhancing ESL students' communicative competence through targeted interventions and pedagogical strategies.

Overall, the conclusion drawn from this study underscores the significance of understanding turn-taking behaviors in ESL communication and provides actionable recommendations for educators, practitioners, and administrators to support ESL students in their language learning journey. By building on the research of these influential scholars and incorporating their insights, this study contributes to the ongoing efforts to

improve ESL instruction and promote effective communication in diverse linguistic and cultural contexts.

Compliance with Ethical Standards

The research project adheres to the following ethical considerations:

1. The dignity and well-being of teacher-respondents are safeguarded, with a commitment to avoid any harm or discomfort to them.

2. Informed consent was obtained from the teacher-respondents, including all pertinent information outlined in the preceding sections of this paper. Participants were made aware that their participation in the study is entirely voluntary, with no pressure or deception involved.

3. Strict confidentiality measures were implemented to protect the privacy of research data throughout the study.

4. The researcher has diligently followed the key provisions of Republic Act 10173, also known as the Data Privacy Act of 2012. This legislation promotes the "free flow of information to promote innovation and growth" (Chapter 1, Section 2) while upholding the fundamental rights to privacy of individuals.

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AN ASSESSMENT ON THE ACADEMIC PERFORMANCE OF JUNIOR HIGH SCHOOL STUDENTS AT CAPUAL NATIONAL HIGH SCHOOL, MINISTRY OF BASIC, HIGHER AND TECHNICAL EDUCATION-SULU

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ABSTRACT

The study is a descriptive research which deals with the assessment on the academic performance of junior high school students at Capual National High School, MBHTE - Sulu. It also deals with the demographic profiles of the respondents in terms of gender, age, grade level, parent's educational attainment, and parent's average monthly income, the extent of the academic performance of junior high school students at Capual National High School, MBHTE – Sulu in terms of school facilities, peer relationship, and parental involvement. It also deals with the significant difference in the extent of the academic performance of junior high school students at Capual National High School, MBHTE – Sulu when data are grouped according to demographic profile in terms of gender, age, grade level, parent's educational attainment, and parent's average monthly income, and the significant correlation among the subcategories subsumed under the extent of the academic performance of junior high school students at Capual National High School, MBHTE – Sulu. The study was conducted at Capual National High School particularly at Bulaghaw, Capual Island, Omar, Sulu. The respondents of the study are the high school students of Capual National High School. Purposive sampling technique was used in selecting the respondents of the study. The research instrument is composed of two parts. Part I is about the demographic profile of the respondents which includes their gender, age, grade level, parent's educational attainment, and parent's average monthly income. Part II is composed of 10 statements each on school facilities, peer relationship, and parental involvement. There are 5 levels to choose from which ranges from "always" to "never". It was found that majority of the junior high school students of Capual National High School are females, in their right age for their present grade level, almost equal number were taken from each gender, the parents are not very educated, and belong to low income family. School facilities and parental involvement often affect the academic performance of the students while peer relationship sometimes affect it. There is no significant difference in terms of demographic profile. There is a moderate

correlation among the school facilities and peer relationship and a low correlation in terms of parental involvement.

Keywords: *Academic performance, School Facilities, Peer Relationship, Parental Involvement.*

INTRODUCTION

Academic performance is the building block of quality education. It has a great contribution to worldwide growth of social and economic development. It is an indicator of the quality of education. The result of the performance rating of the school in National Achievement Test, College Entrance Examination, and future education of the students reflects its form of academic development ranging from kindergarten to junior high school. Such that, frequent poor performance rating of the school and low achievements of the students can be taken as indicative of possibly lack of sense of commitment and efficacies among the faculty of the school, collective efforts, participative school management, and sound decision making.

According to philosophy, education is a weapon whose effect depends on who holds it his arms and at whom it is aimed. One of the factors that are helpful in academic development is a participative learning process which is grounded from the ability of teachers to employ effective strategies that inspire and allow practically all learners to engage themselves actively and willingly share ideas with peers in the interactive learning activities. Vygotsky's Sociocultural Theory (1978) attributes the development of the brain's higher order processes to parents, caregivers, peers, and society at large. According to this theory, cultural variations could exist as social interaction is necessary for human growth. The method places a strong emphasis on how social contact influences personal development. It suggests that social interactions with more experienced individuals around us mold our cognitive capacities and that learning is mostly a social process in humans. It emphasizes how people who act as mentors in our lives—like parents and teachers—have an impact on how we develop psychologically.

Ampofo et.al (2015), Department of Interdisciplinary Studies, College of Agriculture Education, University of Education Winneba, Ghana-West Africa, Mampong-Ashanti. Media measures how much a student's academic aspirations and efforts affect their academic success in Ghana's public senior high schools. The academic performance of senior high school students in Ghana's Ashanti Mampong Municipality was investigated in this study along with a number of significant features. Data for both correlational and descriptive research types were gathered using questionnaires. A multi-stage sampling strategy produced a sample size of 571 students as a result. The study's findings showed the connections between a child's academic achievement and their own, their parents', and their own education. The findings also demonstrated that the child's effort, the mother's level of education, the child's sex, and the child's desire for education were the main determinants of academic accomplishment. Again, the outcomes refuted

the null hypothesis. These findings led to the recommendation that parents ensure that their kids spend a lot of time reading and that they are ready to support them through challenging periods. Students should be encouraged to have high academic goals by education stakeholders.

Younas, et al. (2020) PhD in Education at Soochow University, Suzhou, China's School of Education. Effects of the Home Environment on Academic Performance in Higher Education Students. This study aims to explore the relationship between a student's home environment and academic success. The study's main objective is to look at the connection between the family environment and academic achievement of Pakistani students. A self-administered questionnaire from four Pakistani provinces was utilized to gather data from 300 respondents as part of a descriptive survey research design. A stratified random sampling method was used to select a sample of the respondents. To evaluate the data, regression analysis was employed. The result is explained using three different forms of analysis: demographic data, inferential analysis, and descriptive analysis. The results of the study indicated a slender positive correlation between students' familial environment and academic success. It is also revealed that perceptions about gender-specific academic achievement and the family environment are the same for males and girls in the same status. Finally, recommendations were sent to legislators, parents, and school administrators.

Research Questions

It aimed to find answers to the following questions:

1. What is the demographic profile of the respondents in terms of:
   1.1 Gender;
   1.2 Age;
   1.3 Grade level;
   1.4 Parent's educational attainment; and
   1.5 Parent's average monthly income?
2. What is the extent of the academic performance of junior high school students at Capual National High School, MBHTE-Sulu in terms of:
   2.1 School facilities;
   2.2 Peer relationship; and
   2.3 Parental involvement?
3. Is there a significant difference in the extent of the academic performance of junior high school students at Capual National High School, MBHTE-Sulu when data are grouped according to demographic profile in terms of the following:
   3.1 Gender;
   3.2 Age;
   3.3 Grade level; and
   3.4 Parent's educational attainment?
4. Is there a significant correlation between the sub-categories subsumed under the extent of the academic performance of junior high school students at Capual National High School, MBHTE-Sulu in terms of

4.1 School facilities;
4.2 Peer relationship; and
4.3 Parental involvement?

METHODOLOGY

Research Design

In this component, the researcher adopted the quantitative research method particularly the descriptive-explanatory research design.

Descriptive-explanatory research design is a suitable design in the collection, analysis, classification, tabulation, and interpretation of the desired information. It is an ideal research design in gauging quantitative data to formulate logical and reliable interpretation specifically regarding the extent of the factors affecting the academic performance of junior high school students of Capual National High School, MBHTE – Sulu in terms of school facilities, peer relationship, and parental involvement leading to address the needs for academic development.

Cristobal (2017) states that the purpose of descriptive research design is to collect data on certain features within a given topic of study. Its goal is to paint a picture of events as they occur. This kind of research doesn't entail any variable modification.

Research Locale

The researcher conducted the study at Capual National High School, Ministry of Basic Higher and Technical Education (MBHTE) – Sulu this current school year 2023-2024. Capual National High School, with a total student's population of 696 based on the official record (SF form) at the office of the OIC - principal, is located at Bulaghaw Capual Island, Omar, Sulu.

Bulaghaw Capual Island, Omar is among the municipalities under the 2nd district of Sulu, Philippines where the major sources of income of families are farming and fishing.

The researcher has been working as a secondary school teacher at Capual National High School since 2010 and has been cognizant of its existing issues and concerns. Thus, the researcher chooses the school as the research local of the study.

Respondents of The Study

The respondents of this study were the one hundred (100) randomly selected students among the 696 junior high school students of Capual National High School, MBHTE - Sulu.

The table below showed the distributions of samples in the research study.

Table 2

Grade level	Number of respondents	Total
Grade 7	25	25
Grade 8	25	25
Grade 9	25	25
Grade 10	25	25
Total	100	100

Sampling Design

The non-probability sampling design through purposive sampling method was employed in this study due to resources and time constraints. The use of purposive sampling technique was to ensure the representation of gender, age, grade level, civil status, and educational attainment variables among junior high school students.

Research Instrument

The research instrument of this study was adopted from the standardized research instrument of the study of Rosalind Martin, et.al (2015), entitled “Perceptions of Quality School Facilities” with minor alteration to make it suitable to the settings of the study grounded from its statement of the problem. Thus, the instrument of this study is a well-structured, adopted, and modified standardized questionnaire.

The survey questionnaire of this study covered the extent of the academic performance of junior high school students of Capual National High School, MBHTE – Sulu which was presented in two components. The first component was mainly about the demographic profile of the respondents such as gender, age, grade level, parent’s educational attainment, and parent’s average monthly income. The second component was all about the extent of the academic performance of junior high school students at Capual National High School, MBHTE – Sulu in terms of its sub-categories such as school facilities, peer relationship, and parental involvement.

The questionnaire consisted of 30-item statements which were presented in three sub-categories. Each category Was made up of 10-item statements.

To gauge the extent of the academic performance of the junior high school students at Capual National High School, MBHTE – Sulu, the five-point Liker's Scale, as follows, was used: 5– always, 4- often, 3-sometimes, 2- for rarely, and 1- never.

Data Gathering Procedure

In this study, the researcher applied the standard accepted protocol of the school of graduate studies of Sulu State College in securing authorization from specified offices to administer the survey questionnaire at the chosen research locale.

Insofar as the research design of the study is descriptive- explanatory, the researcher used the five - point Likert scale to gauge the extent of the variables stipulated in the statement of the problem.

To administer the survey questionnaire of the study at the research locale in a permissible manner, the researcher acted upon the steps as follows:

I. Requested a permit from the dean of the school of graduate studies of Sulu State College.
II. Requested a permit from the office of the school's division superintendent, MBHTE – Sulu,
III. Requested a permit from the office of the school principal/OIC of Capual National High School.

Prior to the conduct of the survey, the researcher gave a brief orientation regarding instructions on seat arrangement, on how to put a check mark on the appropriate box, as well as the manner of distribution and retrieval of the questionnaire.

Statistical Treatment of Data

In order to make an accurate treatment of empirical data, leading to formulation of relevant analysis, interpretation, and evaluation, the researcher used the following statistical tools.

I. **Frequency and Percentage**.

Frequency and percentage was used to determine the demographic profile of the respondents such as gender, age, grade level, parent's educational attainment, and parent's average monthly income.

II. **Weighted Mean and Standard Deviation**.

Weighted mean and standard deviation was used to determine the extent of the factors affecting the academic performance of junior high school students at Capual National High School, MBHTE –Sulu in terms of school facilities, peer relationship, and parental involvement.

III. **t-test and One-way Analysis of Variance (ANOVA).** t-test for independent variable was used to determine the significant differences in the extent of the factors affecting the academic performance of junior high school students at Capual National High School, MBHTE –Sulu when data were grouped according to respondent's demographic profile such as gender. One-way analysis of variance was used to determine the significant differences in the extent of the factors affecting the academic performance of junior high school students at Capual National High School, MBHTE –Sulu when data were grouped according to age, grade, level, parents 'educational attainment, and parent's average monthly income.

IV. Pearson Product – Moment Correlation.

Pearson product-moment correlation was used to determine the significant correlation between the extent of the factors affecting the academic performance of junior high school students at Capual National High School, MBHTE –Sulu in terms of school facilities, peer relationship, and parental involvement.

V. To determine the extent of the factors affecting the academic performance of junior high school students at Capual National High School, MBHTE –Sulu, the researcher used the five - point Likert Scale table below:

LIKERT'S SCALE TABLE

Point	Scale value	Interpretation
5	4.5 – 5.00	Always
4	3.5 – 4.49	Often
3	2.5 – 3.49	Sometimes
2	1.5 – 2.49	Rarely
1	1.0 – 1.49	Never

RESULTS AND DISCUSSION

1. ***What is the demographic profile of the junior high school students of Capual National High School, MBHTE- Sulu in terms of 1.1 gender, 1.2 age, 1.3 grade level, 1.4 parent's educational attainment, and 1.5 parent's average monthly income?***

1.1 Demographic Profile of the Respondents in terms of Gender

Table 1.1 presents the demographic profile of the respondents in terms of gender.

It showed that 75 or 73.5% of the respondents are females and only 27 or 26.5% are males.

The result implies that the female respondents outnumber the male respondent's in terms of gender.

Table 1.1 Demographic Profile of the Respondents in terms of Gender

Gender	Frequency	Percentage
Male	27	26.5%
Female	75	73.5%
TOTAL	102	100%

1.2 Demographic Profile of the Respondents in terms of Age

Table 1.2 shows the demographic profile of the respondents in terms of age.

Fifty-seven or 55.9% of the respondents each are between 14 – 16 years old and only 1 or 1% is 20 years old and above.

The result implies that more than half of the respondents are in their middle teens and only 1 is matured.

Table 1.2 Demographic Profile of the Respondents in terms of Age

Age	Frequency	Percentage
13 years old and below	29	28.4%
14 – 16 years old	57	55.9%
17 – 19 years old	15	14.7%
20 years old and above	1	1.0%

TOTAL	102	100%

1.3 Demographic Profile of the Respondents in terms of Grade Level

Table 1.3 presents the demographic profile of the respondents in terms of grade level. It showed that almost equal number of respondents were taken from each grade level.

The result implies that the researcher tried her best to have equal representation from each grade level.

Table 1.3 Demographic Profile of the Respondents in terms of Grade Level

Grade Level	Frequency	Percentage
Grade 7	24	23.5%
Grade 8	26	25.5%
Grade 9	27	26.5%
Grade 10	25	24.5%
TOTAL	102	100%

1.4 Demographic Profile of the Respondents in terms of Parent's Educational Attainment

Table 1.4 presents the demographic profile of the respondents in terms of parent's educational attainment. It showed that 62 or 60.8% of the parents reached elementary level in education while 1 or 1% finished a doctorate degree.

The result implies that majority of the parents were less educated and only less than 20% are very educated.

Table 1.4 Demographic Profile of the Respondents in terms of Educational Attainment

Educational Attainment	Frequency	Percentage
No Formal Education	7	6.9%
Elementary Level	62	60.8%
Secondary Level	16	15.7%
College Level	14	13.7%

Master's Degree	2	2.0%
Doctorate Degree	1	1.0%
TOTAL	102	100%

1.5 Demographic Profile of the Respondents in terms of Parent's Average Monthly Income

Table 1.5 presents the demographic profile of the respondents' in terms of parent's average monthly income. It showed that 81 or 79.4% of the parents earn P5,000.00 and below each month and only 3 or 2.9% earn P15,001.00 and above each month.

The result implies that more than half of the respondents belong to low income family.

Table 1.5 Demographic Profile of the Respondents in terms of Parent's Average Monthly Income

Parent's Average Monthly Income	Frequency	Percentage
P5,000.00 and below	81	79.4%
P5,001.00 – 10,000.00	12	11.8%
P10,001.00 – 15,000.00	6	5.9%
P15,001.00 and above	3	2.9%
TOTAL	102	100%

2. What is the extent of the academic performance of junior high school students of Capual National High School, MBHTE – Sulu in terms of 2.1 school facilities, 2.2 peer relationship, and 2.3 parental involvement?

Table 2.1 presents the extent of the academic performance of junior high school students of Capual National High School in terms of school facilities**.**

It showed that the respondents indicated from ***always*** to ***sometimes*** on the different statements on school facilities. Among those they indicated ***always*** are; our school environment is clean and well – maintained which encourages us to focus on our studies (mean = 4.941. SD = .236); and our classroom is ventilated and clean, so it is comfortable for teaching and learning activities (mean = 4.500, SD = .728). For ***sometimes***, some of the statements are; the class size of students is ideal for academic

development (mean = 3.412, SD = 1.402); and the teacher – student ratio does not follow the DepEd National recommendation which is disrupting the learning process and hampering our hope to improve academic performance (mean = 3.039, SD = 1.954). The average mean of 3.965 means that school facilities ***often*** affect the academic performance of junior high school students of Capual National High School.

The result simply implies that school facilities can greatly affect the academic performance of junior high school students of Capual National High School.

Table 2.1 Extent of the Academic Performance in terms of School Facilities

School Facilities	Mean	SD	Interpretation
Our school environment is clean and well – maintained which encourages us to focus on our studies.	4.941	.236	Always
There is adequate space for our teachers to work productively and inspires us to improve our academic performance.	4.049	1.631	Often
Our classroom is ventilated and clean, so it is comfortable for teaching and learning activities.	4.500	.728	Always
There is a sufficient speed and reliability of internet connection in our school which support instructional and learning practices.	4.333	1.137	Often
Our library is equipped with adequate references that boost our interest to read and improve our academic performance.	3.618	1.567	Often
6. Our school laboratory is equipped with adequate modern laboratory instruments that boost our interest to focus on academic improvement.	4.010	1.085	Often
7. The classrooms are enough that respond to students' need to engage in learning activities.	4.108	1.142	Often
8. The class size of students is ideal for academic development.	3.412	1.402	Sometimes
9. Our classroom is equipped with adequate armchairs which makes us comfortable to attend to the learning process and improve our academic performance.	3.637	1.646	Often
10. The teacher – student ratio does not follow the DepEd National recommendation which is disrupting the learning process and hampering our hope to improve academic performance.	3.039	1.954	Sometimes
AVERAGE	**3.965**		**OFTEN**

LEGEND

SCALE	RANGE	INTERPRETATION
5	4.50 – 5.00	Always
4	3.50 – 4.49	Often
3	2.50 – 3.49	Sometimes
2	1.50 – 2.49	Rarely
1	1.00 – 1.49	Never

Table 2.2 presents the extent of the academic performance of junior high school students of Capual National High School in terms of peer relationship.

It showed that the respondents indicated from ***often*** to ***rarely*** on the different statements and among those they indicated ***often*** are; to work with peers in classroom activities encourage me to be more active and improve my academic performance (mean = 4.412, SD = 0.916; and when I work with peers in class activities, I become more active and it brings up my academic performance (mean = 4.392, SD = 1.195). For ***rarely***, some of the statements are; my peers persuade me to attend online games which distracts my academic performance (mean = 2.226, SD = 1.641); and my peers convince me to skip classes which distract my academic performance (mean = 2.128, SD = 1.663). However, they indicated ***never*** in only statement 7 and that is on; my peers persuade me to try cigarette smoking, it lessens my interest to focus on improving my academic performance (mean = 1.4714, SD = 0.951). The average mean of 3.199 means that peer relationship sometimes affects the academic performance of junior high school students of Capual National High School.

The result implies that peer relationship can sometimes help improve the academic performance of junior high school students of Capual National High School

Table 2.2 Extent of the Academic in terms of Peer Relationship

Peer Relationship	Mean	SD	Interpretation
My peers keep making bad joke about me and it distracts my academic development.	1.990	1.294	Rarely
When I work with peers in class activities, I become more active and it brings up my academic performance.	4.392	1.195	Often
My peers convince me to skip classes which distract my academic performance.	2.128	1.663	Rarely
Having studious peers encourages me to improve my study habits and develop my academic performance.	4.206	1.261	Often
Working with intelligent peers helps me learn the value of empathy, cooperation, and improve my solving problem skill.	3.784	1.122	Often

My peers are sluggish in school works; I can't focus on improving my academic performance.	3.716	1.498	Often
My peers persuade me to try cigarette smoking, it lessens my interest to focus on improving my academic performance.	1.471	.951	Never
My peers persuade me to attend online games which distracts my academic performance.	2.226	1.641	Rarely
9. I find improvement in working with peers during class discussions because I also learned the values of academic performance from them.	3.578	1.465	Often
10. To work with peers in classroom activities encourages me to to be more active and improve my academic performance.	4.412	.916	Often
AVERAGE	3.199		SOMETIMES

Table 2.3 presents the extent of the academic performance of junior high school students of Capual National High School in terms of parental involvement.

The respondents indicated from ***often*** to ***sometimes*** on the different statements. Some of those statements they indicated ***often*** are; my parents check my study habit regularly to ensure improvement in my academic performance (mean = 4.402, SD =1.065); and my parents communicate with my teachers to monitor my academic performance (mean = 4.324, SD = 1.415). For ***sometimes***, some of the statements are; my parents encourage me to go to libraries to further focus on academic performance (mean = 3.431, SD =1.732); and my parents portray a positive attitude about schools and education which enlighten me about the importance of academic performance (mean = 3.382, SD = 1.251). The average mean of 4.016 means that parental involvement ***often*** affects the academic performance of junior high school students of Capual National High School.

The result simply implies that parental involvement often positively affects the academic performance of junior high school students of Capual National High School.

Table 2.3 Extent of the Academic Performance in terms of Parental Involvement

Parental Involvement	Mean	SD	Interpretation
1. My parents communicate with my teachers to monitor my academic performance.	4.324	1.415	Often
2. My parents check my study habit regularly to ensure improvement in my academic performance.	4.402	1.065	Often
3. My parents attend parents – teacher – community meeting and it encouragers me to participate actively in our class discussion.	4.549	.740	Always
4. My parents attend our school activities and it inspires me to perform well in school.	4.245	.861	Often
5. My parents help me in a positive way in my homework which boost my interest in my academic improvements..	3.980	1.177	Often
6. My parents portray a positive attitude about schools and education which enlighten me about the importance of academic performance.	3.382	1.251	Sometimes
7. My parents encourage me to go to libraries to further focus on academic performance.	3.431	1.732	Sometimes
8. My parents check my class schedules to maintain my attendance and punctuality which make me attentive to academic performance.	3.333	1.471	Sometimes
9. My parents allow me to skip homework to participate in extra - curricular activities which lessen my interest in good academic performance.	4.118	1.458	Often
10. My parents reward me for good grades which inspires me to keep my good study habits and improve my academic performance.	4.400	1.435	Often
AVERAGE	4.016		OFTEN

3. Is there a significant difference in the extent of the academic performance of junior high school students of Capual National High School, MBHTE – Sulu when data are grouped according to gender, age, grade level, parent's educational attainment, and parents average monthly income?

The t - test was used for gender since there are only two categories. The sig. value of 0.140 for school facilities are greater than the p= value of .05, the sig. value of 0.257 for

peer relationship is greater the p – value of .05, and the sig. value of 0.343 was also greater than the p = value of .05. It means that the null hypothesis is accepted.

There is no significant difference in the extent of the academic performance of junior high school students of Capual National High School, MBHTE- Sulu when data are grouped according to their gender.

The result implies that gender is not a determinant on the academic performance of junior high school students of Capual National High School. Their academic performance could be affected by other factors and has nothing to do with gender.

Younas, et al. (2020) found that the respondents indicated that there is no significant differences in the perception about academic performance and gender.

Table 3.1 t – test for Significant Difference in the Extent of the Academic Performance of Junior High School Students of Capual National High School when Data are Grouped in terms of Gender

		Mean					
Variables	**Grouping**	**Mean**	**SD**	**Diff.**	**t**	**Sig.**	**Description**
School Facilities	Male	3.050	.630				Not
	Female	3.230	.750	.180	18.490	.140	Significant
Peer Relationship	Male	3.550	.550				Not
	Female	3.740	.720	.190	24.150	.257	Significant
Parental Involvement	Male	3.210	.810				Not
	Female	3.980	.790	.770	20.650	.343	Significant

Significant at .05 level

In Table 3.2 Analysis of Variance (ANOVA) was used for age, grade level, parent's educational attainment, and parent's average monthly income. The sig. value of 0.542 for age is greater than the p - value of .05, the sig. value of 0.582 for grade level is greater than the p value at .05, the sig. value of 0.340 for parent's educational attainment is greater than he p -value of .05, and the sig. value of 0.425 for parent' average monthly income is also greater than the p - value of .05. It could only mean that the null hypothesis is accepted in terms of age, grade level, parent's educational attainment, and parent's average monthly income.

There is no significant difference in the extent of the academic performance of junior high school students of Capual National High School when data are grouped

according to their age, grade level, parent's educational attainment, and parent's average monthly income.

The result suggests that the various demographic profiles are unable to forecast the level of academic achievement among Capual National High School junior high school pupils.

According to Ampofo (2015), the primary factors of academic performance are the child's efforts, gender, mother's education, and the child's desire for academic success.

Table 3.2 ANOVA for Significant Difference in the Extent of the Academic Performance of Junior High School Students of Capual National High School when Data are Grouped in terms of Age, Grade Level, Parent's Educational Attainment, and Parent's Average Monthly Income

		Sum of Square	df	Mean Square	f	Sig.	Description
AGE							
Between Groups		.122	3	0.041	0.732	.542	Not Significant
Within Groups		5.525	98	0.056			
Total		5.647	101				
Grade Level							
Between Groups		5.283	3	1.761	0.655	.582	Not Significant
Within Groups		263.472	98	2.688			
Total		268.755	101				
Parent's Educational Attainment							
Between Groups		8.301	5	1.660	0.665	0.340	Not Significant
Within Groups		239.788	96	2.498			
		248.088	101				

	Total						
Parent's Average Monthly Income							
	Between Groups	5.555	3	1.852	0.940	.425	Not Significant
	Within Groups	193.151	98	1.971			
	Total	198.706	101				

Significant at .05 level

4. Is there a significant correlation among the subcategories subsumed under the extent of the academic performance of junior high school students of Capual National High School, MBHTE – Sulu?

Pearson Product – Moment Correlation or Pearson r was used to determine if there is a significant correlation among the subcategories subsumed under the extent of the academic performance of junior high school students of Capual National High School, MBHTE – Sulu in the context of school facilities, peer relationship, and parental involvement.

The average value of r = 0.396 for school facilities was interpreted as ***moderate correlation*** while the average value of r = 0.403 for peer relationship was interpreted as ***moderate correlation*** at significant value of .05 two- tailed test, and the average value of .254 for parental involvement was also interpreted as ***low correlation.***

The result simply implies that the different factors has a ***moderate correlation*** as far as the extent of academic performance of junior high school students of Capual National High School, MBHTE – Sulu in terms of school facilities and peer relationship. However, parental involvement has little to do with the two factors.

Younas (2020) found a weakly positive link between a student's academic achievement and their family environment.

Table 4. Significant Correlation in the Extent of the Academic Performance of Junior High School Students of Capual National High School, MBHTE – Sulu

		Pearson r	Sig.	n	Description
	Peer				
School	Relationship	0.383	.000	102	Moderate
Facilities	Parental				
	Involvement	0.408	.000	102	Moderate
	AVERAGE	**0.396**			**MODERATE**
	School				
Peer	Facilities	0.592	.000	102	High
Relationship	Parental Involvement	0.213	.000	102	Low
	AVERAGE	**0.403**			**MODERATE**
	School				
Parental	Facilities	0.203	.000	102	Low
Involvement	Peer				
	Relationship	0.304	.000	102	Low
	AVERAGE	**0.254**			**LOW**

*Correlation Coefficient is significant at £ = .05

Correlation Scales adapted from Hopkins (2002):
0.0– 0.1 = Nearly Zero; 0.1 – 0.3 = Low; 0.3 – 0.5 = Moderate; 0.5 – 0.7 = High; 0.7 – 0.9 = Very High; 0.9 – 1.0 = Nearly Perfect

Conclusions

The following was concluded based on the findings of the study:

The female students outnumber the male students in the junior high school of Capual National High School. Majority are in the middle teens in age. Most parents did not finish even high school, and earns below the minimum every month.

It only showed that school facilities and parental involvement can spell the difference between success and failure of the academic performance of the students. Peer relationship can also affect their academic performance sometimes.

The absence of difference in the extent of the academic performance among junior high school students of Capual National High School when data are grouped according to gender, age, grade level, parent's educational attainment, and parent's average monthly income only proves that profiles of the students cannot exactly predict how good or how bad the academic performance of the students.

The moderate correlation in the extent of the academic performance among junior high school students of Capual National High School in terms of school facilities and peer relationship could only mean that the two factors are interrelated to some extent. However, parental involvement has an effect to the academic performance to some extent.

Recommendations

This study recommends the following:

1. Further study on the extent of the academic performance among students may be conducted to ascertain the effect of the different factors on them.

2. Future researchers on the same topic may add variables like study habits, time management, and other variables not covered by this study.

3. Teachers may adapt effective approaches, methods, techniques for the enhancement on the academic performance of the students.

4. Schools may provide the learners an environment that is conducive to learning in order to improve their academic performance.

5. Parents may provide a home that is conducive to learning and must always get involve in their children's education.

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Compliance with Ethical Standards

First, a thorough informed consent form explaining the trial's goals, methods, potential risks and benefits, and confidentiality regulations was sent to each participant. Furthermore, since the personal information of the responders had no effect on the trial's results, all trial data points were painstakingly anonymized. To preserve participant privacy, data collection was done in a private environment, and the gathered information was kept in a safe archive that the researchers alone could access. Notwithstanding the disparities in viewpoints and opinions, each participant was accorded respect.

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ANXIETY DRIVEN BY MODULAR LEARNING: ITS IMPACT TO THE ACADEMIC PERFORMANCE AS PERCEIVED BY THE THIRD YEAR GENERAL SCIENCE STUDENTS OF THE COLLEGE OF EDUCATION IN MINDANAO STATE UNIVERSITY-SULU: BASIS AS A WAY OF TRAVERSING THE CHALLENGE OF NEW NORMAL

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ABSTRACT

This study aimed to determine if anxiety driven by modular learning has an impact on the academic performance as perceived by the third year general science students in Mindanao State University-Sulu. It explored further to determine the levels of anxiety driven by modular learning as perceived by the students, it also determined how can anxiety driven by modular learning affects the academic performance of the students and the interventions that may hinder anxiety driven by modular learning as perceived by the students. The study used descriptive research design where the researchers utilized a checklist questionnaire to acquire the data needed. The setting of the study was conducted at Mindanao State University-Sulu. Thirty-eight (38) students were the respondents of the study which are the third year general science students of the College of Education. Purposive sampling was used in selection of respondents and weighted mean was used as the statistical tool of the study. The questionnaire checklist was divided into three parts and each contains ten (10) statements and was administered of the first semester of A.Y 2020-2021.

Keywords: *anxiety, modular learning, academic performance, interventions, new normal*

INTRODUCTION

Anxiety is one of the biggest enemies of every individual be it in school, at home or even just vibing alone. Anxiety can be driven by so many factors including the people that surrounds you, the community you lived in, and the like. If anxiety has not been diagnosed as early as possible, it can lead to some serious problems like depression. The most prone to anxiety or the most affected by anxiety are those younger people who are fighting and striving for their future.

As defined by Ajmal and Ahmad (2019), anxiety is a basic human emotion that consists of fear and uncertainty and usually it occurs when individual believes that the event is a threat to self or self-esteem. Anxiety can also be state or trait depending on its duration. Anxiety blocks the normal thought processes. It favors a passive approach to material rather than interaction with it. Anxiety is the human emotion that everyone experiences. Students experience problems during their studies, and feel anxious when taking exams or making significant life decisions. There is evidence in the literature that there is a negative correlation between anxiety and student achievement, and there is a negative correlation between anxiety and the realization of important cognitive and emotional outcomes in distance learning education (Jegede, Alaiyemola, & Okebukola, 1990).

By this time, maybe the pandemic is gone but we can't deny that its trace still remains thus education must not stop. In order to continue the learning of the youths, the government has come up with a solution to render the needs of the students because we all believe that education is the key to success so it must not be disrupted. The idea of continuing education has been on the line since it is one of the priorities of the government; the learnings of the students.

Nevertheless, as stated by DepEd (2020), President Rodrigo Duterte mandated the Department of Education (DepEd) to delay, if not, cancel face-to-face teaching for as long as the vaccine for the coronavirus disease is not yet made available to the public. However, opting not to delay education, DepEd introduced alternative learning delivery modalities that utilize modern technology.

The solution that the government has made to continue educating the youth is the so-called distance learning. Wherein students receive instruction through online classes, video recordings, video conferencing, or any other audio/visual technology medium (Loveless, 2021). The teaching instruction can also be done through modular classes which our province is now utilizing to render the needs of the students in terms of learning.

According to Mark Llego (2021), modular distance learning involves individualized instruction that allows learners to use self-learning modules (SLMs) in print or digital format/electronic copy, whichever is applicable in the context of the learner, and other learning resources. With regards to this, the emphasis and goal of our educator is to continue the educational process of all student amidst the pandemic. In order to retain and continue their learning process and their academic performances.

However, the sudden change in students' learning has brought change to some students' mental health. And according to International Board of Credentialing and Continuing Education Standards (2019), students who have undiagnosed anxiety can negatively impact their ability to learn and enjoy their time in school. When students have anxiety that goes unnoticed their mental health is at risk, which can lead to social and behavioral problems, poor performance and learning, neglected hygiene, poor self-care practices and low self-esteem.

Furthermore, the main purpose of this study is to investigate if anxiety driven by modular learning has an impact on the academic performance of the Third Year College General Science Students Mindanao State University-Sulu.

Research Questions

The purpose of this study is to determine if anxiety driven by modular learning has an impact on the academic performance of the Third Year General Science Students in Mindanao State University-Sulu. Specifically, this study sought to answer the following:

1. What is the level of impact of anxiety driven by modular learning on the academic performance as perceived by the Third Year General Science Students of in Mindanao State University-Sulu?
2. How can anxiety have driven by modular learning affects the academic performance as perceived by the Third Year General Science Students in Mindanao State University-Sulu?
3. What are the interventions that may hinder the anxiety driven by modular learning on the academic performance as perceived by the Third Year General Science Students in Mindanao State University-Sulu?

METHODOLOGY

Research Locale

The setting of the study was conducted at Mindanao State University-Sulu. The Mindanao State University-Sulu is the only university in Jolo, Sulu located at Capitol Site near the Provincial Capitol. The said university is composed of seven (7) colleges excluding the Mindanao State University-Sulu Laboratory High School. Particularly, this study is conducted at College of Education in between the College of Business Administration and College of Public Affairs.

Sampling Method

In this study, the researchers used Purposive Sampling or Judgement sampling to select the participant of the study. According to Crossman (2020), Purposive Sampling is a non-probability sample that is selected based on characteristics of a population and the

objective of the study.

Moreover, the respondents of this study are the Third Year General Science Students of the College of Education in Mindanao State University-Sulu which is comprised of thirty-eight (38) students – thirty regular students and 8 irregular students under Bachelor of Secondary Education Major in General Science.

Research Instrument

The researchers used Questionnaire checklist to obtain the needed information for this study and to help them answer the objectives of the study in finding out if anxiety driven by modular learning has an impact on the academic performance as perceived by the Third Year General Science Students in Mindanao State University-Sulu. Specifically, each questionnaire is divided into three parts. The first part of the questionnaire is the first statement of the problem which is the impact of anxiety on the academic performance as perceived by the students, the second part contains the second statement of the problem which is how can anxiety driven by modular learning affect the academic performance as perceived by the students and the last part of the questionnaire is the third statement of the problem which is interventions that may hinder anxiety driven by modular learning as perceived by the students.

Statistical Treatment of Data

For the analysis of data, the researchers used Weighted Mean as a statistical tool in dealing with the impact of anxiety driven by modular learning to the academic performance as perceived by the students, how can anxiety driven by modular learning affect the academic performance as perceived by the students and the interventions that may hinder anxiety driven by modular learning and its impact on the academic performance as perceived by the Third Year General Science Students in Mindanao State University-Sulu.

Scope and Delimitation

This study focuses on the anxiety driven by modular learning and its impact to the academic performance as perceived by the students in Mindanao State University-Sulu. The participant of this study is delimited to the Third Year General Science Students of the College of Education. Furthermore, the study is to be conducted only in College of Education in Mindanao State University-Sulu. The study is confined in the second semester of the academic year 2020-2021.

RESULTS AND DISCUSSION

Table 4.1 Level of impact of anxiety driven by modular learning on the academic performance as perceived by the students.

STATEMENTS	Weighted Mean	Verbal Description
1. Anxiety driven by modular learning makes me uncomfortable during my study time.	**2.78**	Moderately High Impact
2. I cannot interact with other people.	**2.78**	Moderately High Impact
3. Anxiety lessens my motivation to do my school works.	**2.86**	Moderately High Impact
4. It helps me coping with stress due to my school works.	**2.55**	Moderately High Impact
5. Anxiety helps me to be independent.	**2.73**	Moderately High Impact
6. It makes me improved my academic performance.	**2.31**	Low Impact
7. Anxiety disturbed my concentration in answering the learning materials.	**3.36**	High Impact
8. It enhanced my capacity during the modular learning.	**2.36**	Low Impact
9. Anxiety lessens my will to learn.	**2.71**	Moderately High Impact
10. Anxiety makes me introverted and lose self-improvement.	**2.89**	Moderately High Impact
Overall Mean	**2.733**	**Moderately High Impact**

Legend: 1.00-1.49 (1) – VLI; 1.50-2.49 (2) – LI; 2.50-3.49 (3) – MHI; 3.50-4.00 (4) - HI

Table 4.1 shows the respondents' perspective about the level of impact of anxiety driven by modular learning and its impact on their academic performance during this pandemic. The majority of the students responded moderately high impact which has an overall mean of 2.733. This implies that most of the students' anxiety moderately impacted the academic performance which is brought by modular learning during this time of pandemic.

On the other hand, the respondents' prospect towards the statement numbers six (6) and eight (8) is low impact with a weighted mean of 3.31 and 3.36 which indicates that the improvement on their academic performance has low impact due to anxiety and that the enhancement of their capabilities in relation to their academic performance has also law impact.

Additionally, according to Star (2020) these symptoms of anxiety are a common

problem from people who have been diagnosed with any type of anxiety disorder including panic disorder. However, have you ever considered some of the possible positive effects that may come with having anxiety? Good stress, something now referred to now as eustress keeps us motivated and excited about life. It appears that some degree of anxiety may have similar “silver linings.” However, students answered high impact on number seven (7) which gained a weighted mean of 3.36 which implies that anxiety disturbed their concentration in answering their learning materials.

In addition to that, as cited by Better Health Channel (2017) anxiety disorders can affect a person’s ability to work, study and participate in other activities and anxiety symptoms are associated with impairment of memory and cognitive functions which might interfere with general wellbeing, social life, academic performance, learning ability, and development of social relationships (Afolayan, Donald, Onasoga, Babafemi, & Juan, 2013; Mazzone et al., 2007; McDonald, 2001; Neil & Donald, 2010).

Furthermore, the findings showed that the level of impact of anxiety driven by modular learning to the academic performance of the students is moderately high impact with a weighted mean of 2.73 which only implies that as stated by Dash (2021) levels of anxiety can be influenced by personality, coping strategies, life experiences, and gender.

Finally, moderately high of anxiety have more frequent symptoms than those with mild anxiety, but still have better daily functioning than someone with severe anxiety or panic disorder. For example, people with moderate anxiety may report experiencing symptoms such as feeling on edge, being unable to control their worrying or being unable to relax several days or the majority of days in a week, but not every day (Dash, 2021).

Table 4.2 Anxiety driven by modular learning affect the academic performance as perceived by the Third Year General Science students of the COED.

STATEMENTS	Weighted Mean	Verbal Description
1. Anxiety helps me to develop my critical thinking.	**2.36**	Disagree
2. Anxiety leads me to stress and frustration due to modular learning.	**3.26**	Strongly Agree
3. Anxiety drives me to imagine unimportant and unnecessary things that are not related to my studies.	**3.05**	Agree
4. It makes me a great problem-solver.	**2.42**	Disagree
5. It motivates me to self-explanatory.	**2.60**	Agree
6. It helps me improve my writing and reading comprehension.	**2.26**	Disagree
7. Anxiety leads me to uncomfortable physical sensation which affects my studies.	**3.02**	Agree

8. I cannot focus due to intense fear and worry.	**3.36**	Strongly Agree
9. Anxiety gives me a low self-esteem.	**3.31**	Strongly Agree
10. It is difficult for me to understand my modules due to anxiety.	**3.5**	Strongly Agree
Overall Mean	**2.914**	**Agree**

Legend: 1.00-1.49 (1) – VLI; 1.50-2.49 (2) – LI; 2.50-3.49 (3) – MHI; 3.50-4.00 (4) – HI

Table 4.2 shows that the perspective of the respondents towards how anxiety driven by modular learning affects the academic performance of the students. Majority of the students answered agree which has an overall mean of 2.914. This implies that the respondents agreed that anxiety driven by modular learning affects the academic performance of the students on some cases like they often times overthink but they can also develop their skills in self-explanatory wherein they know how to express their self when they are heard or needs a therapy called cognitive therapy as stated by Better Health Channel (2017).

Meanwhile, students responded disagree with a weighted mean of 2.36, 2.42 and 2.26 on the numbers one (1), four (4) and six (6) which refers to the following statement namely: anxiety helps them to develop their critical thinking, anxiety makes them a great problem-solver and anxiety helps them in improving their writing and reading skills. Students most likely feel that anxiety did not help them to become the best version of their selves. Because as cited by Katharina Star (2020), anxiety is a feeling that is often characterized by intense fear, worry, and apprehension. Many individuals with anxiety describe it as a feeling of nervousness and dread that can be distracting at best and all-consuming at worst.

Additionally, students strongly agree on the numbers two (2), eight (8), nine (9) and ten (10) with a weighted mean of 3.26, 3.36, 3.31, and 3.50 where on the respondents' perspective, anxiety leads them to stress and frustration due to modular learning, they cannot focus due to intense fear and worry, anxiety gives them low self-esteem and it is difficult for them to understand their modules due to anxiety. The American Psychological Association (APA) defines anxiety as "an emotion characterized by feelings of tension, worried thoughts and physical changes like increased blood pressure." And anxiety is a feeling that is often characterized by intense fear, worry, and apprehension. Many individuals with anxiety describe it as a feeling of nervousness and dread that can be distracting at best and all-consuming at worst (Star, 2020).

The respondents perceived that anxiety driven by modular learning can affect the academic performance of the students, which implies they agree that it affects their psychological well-being. An individual exhibiting a combination of low mood, showing no interest or pleasure, guilt, low self-esteem, disturbed appetite, disturbed sleep, and disturbed concentration is termed depressed (Marcus et al., 2012). However, when a person regularly feels disproportionate levels of anxiety, it might become a medical disorder (Felman, 2020).

Table 4.3 Interventions that may hinder anxiety driven by modular learning on the academic performance as perceived by the students.

STATEMENTS	Weighted Mean	Verbal Description
1. I encourage myself to be mindful at all times.	**3.10**	Agree
2. I allow myself to be exposed in some activities in school.	**3.02**	Agree
3. Self-talk really help me to motivate myself.	**3.36**	Strongly Agree
4. I do not like to mingle with other people.	**2.68**	Agree
5. I will allow myself to get relaxed from stress.	**3.26**	Strongly Agree
6. Stimulating assertiveness will help me to develop my self-esteem.	**3.07**	Agree
7. I seldom eat green leafy vegetables because I like processed food.	**2.86**	Agree
8. I seldom seek an advice from our guidance councilor at school.	**2.86**	Agree
9. I talk to my parents regarding my personal problems and school works to help me in dealing with my stress and anxiety.	**2.94**	Agree
10. Exercising helps me reduce stress and somehow remove the negativities in me and clear my mind.	**3.39**	Strongly Agree
Overall Mean	**3.057**	**Agree**

Legend: 1.00-1.49 (1) – VLI; 1.50-2.49 (2) – LI; 2.50-3.49 (3) – MHI; 3.50-4.00 (4) – HI

Table 4.3 presents the interventions that may hinder anxiety driven by modular learning as perceived by the students gained an over-all mean of 3.057 which indicates that they agreed by the interventions that may hinder anxiety driven by modular learning. As stated by Better Health Channel (2017), recovery is possible with appropriate treatment such as exposure therapy, attention training, and a range of anxiety management techniques that can help you manage your symptoms. You can learn the following strategies yourself (using books or taking courses, for example) or you can consult with a trained professional.

On the other hand, the students answered strongly agree on the following numbers of indication: three (3) with a weighted mean of 3.36, five (5) with a weighted mean of 3.26, and ten (10) with a weighted mean of 3.39 by which they strongly agreed on self-talk really help them to motivate their selves, they will allow their selves to get relax from stress and exercising helps them in reducing stress and somehow remove the negativities in them and it can clear their mind. These are some effective interventions that the respondents perceived which is similar to the studies of Better Health Channel (2017) where they cited that cognitive therapy strategies which includes rational ‘self-talk’, reality testing, attention training, cognitive challenging and cognitive restructuring. This includes monitoring your self-talk, challenging unhelpful fears and beliefs, and testing out the reality of negative thoughts.

Additionally, Simple activities can help soothe the mental and physical signs of anxiety

and physical exertion can improve self-image and release chemicals in the brain that trigger positive feelings (Better Health Channel, 2017).

Anxiety itself is not a medical condition but a natural emotion that is vital for survival when an individual finds themselves facing danger. Treatment involves a combination of different types of therapy, medication, and counseling, alongside self-help measures. An active lifestyle with a balanced diet can help keep anxious emotions within healthy limits (Better Health Channel, 2017).

Conclusions

The results revealed that anxiety driven by modular learning indeed has an impact to the academic performance as perceived by the students. The levels of anxiety driven by modular learning shows that it is moderately high which impacted the academic performance. And it also affects the academic performance of the students because students tend to imagine things which are irrelevant to their studies which became the reason why they are distracted and uncomfortable, hence the students tend to become passive when it comes to answering their learning materials through modular study. However, there are some interventions that can be done to avoid and to treat anxiety, it can be done through being assertive, mindful, allowing oneself to be exposed in some activities, exercising, self-talk, and having someone to talk with.

Hence, anxiety driven by modular learning indeed has an impact on the academic performance as perceived by the Third Year General Science Students in Mindanao State University-Sulu.

Recommendations

In light of the findings and conclusion of the study, the following recommendations are forwarded:

1. Students should know how to manage their time in studying and in their personal lives to ensure that they are not distracted and that they can accomplish their task both in school and in their daily life.
2. Parents should have more time in monitoring the health of their children especially their mental health and they need to establish good communication in order to help their children in handling their personal dilemma.
3. Teachers should assess the activities to be given to the students if they can do it without having to stress their selves in answering their learning materials. And they also need to be understanding and patient when it comes to students who’s having a mental breakdown. Lastly, teachers should also make their instructional material based on the capabilities of their students

Compliance with Ethical Standards

The researchers hereby declare that an informed consent was obtained from the respondents of the study. In addition, the researchers assure that the information gathered from respondents are kept confidential. Plagiarism was strictly observed throughout the research process, and that there was no bias in the interpretation of the findings and that the results were used purely for research purposes.

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ASSESSING THE NEXUS OF THE KNOWLEDGE, SKILLS, AND ATTITUDES IN EMERGENCY AND DISASTER RESPONSE AMONG NURSES

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ABSTRACT

This study determined nurses' knowledge, skills, and attitudes in emergency and disaster response in selected hospitals in Eastern Pangasinan. It tackled their age, civil status, highest educational attainment, position, monthly family income, years in service, and a number of relevant trainings on emergency and disaster. The study utilized the descriptive research design and a survey questionnaire as the primary tools for gathering data. Several statistical tools were used: frequency and percentage, weighted mean, t-test, Scheffe test, and ANOVA (Analysis of Variance). The nurse respondents were young adults, singles, and holders of bachelor's degrees. The majority were staff nurses, earning an average monthly income, having been in the service for many years, and receiving inadequate relevant training in emergency and disaster nursing. The respondents were knowledgeable about emergency and disaster response, were skillful in attending to patients in the ER, and practiced the right attitudes in handling emergency and disaster response. Nurses who finished units leading to a master's degree claim to have better skills in emergency and disaster response than those who are already master's degree holders; the skills of the nurses in emergency and disaster response are significantly different across positions. Staff nurses are more skillful in emergency and disaster response compared to supervisors. The more relevant training the nurses have attended, the more knowledgeable they are in emergency and disaster response.

Keywords: *Knowledge, Skills, Attitudes, Emergency, Disaster*

INTRODUCTION

The role of nurses is necessary, particularly in the emergency room. They do the screenings, care for the critically ill, implement triage protocols, communicate with families, and attend to the dying. They worked in different areas since they were on a rotation schedule. They provide and learn new skills, like being safety officers and caring for severely ill patients. They make triage plans in place. They reallocate resources, and nurses lead and innovate during a crisis (Moore & Images, 2020)**.** Nurses' commitment, flexibility, and compliance during the COVID-19 pandemic have been significant. Despite challenges, the nurses provided compassionate care to patients needing care. Nurses learn new skills, adapt to new roles, and lead innovations during a crisis. Nurses must be acknowledged for their endless support, ensuring the resources necessary to sustain the delivery of high-quality care to patients. Their unwavering dedication to patient care proves their essential role in our healthcare system. Nurses' Nurses' compassion and skills must continue to be appreciated. Time is necessary for the emergency room every minute counts on saving lives and preventing the decline of a patient's condition. By efficiently triaging patients, ER nurses knew those that required immediate attention and prioritization in their care. They can ensure that critical interventions are initiated immediately, potentially preventing further complications or even death. Prioritizing patient care helps streamline the flow of patients in the emergency room, reducing waiting times and improving overall efficiency. ER nurses are trained to assess patients immediately, noting manifestations that need urgent intervention. They use their clinical judgment and knowledge to evaluate the overall condition and decide the patient's priority level. It is a delicate balancing act, as they must consider not only the understanding of the patient's condition but also the availability of resources and the needs of other patients in the emergency room.

In the fast-paced setting of an emergency room, nurses take the lead in prioritizing patient well-being by evaluating individuals to gauge the urgency of their requirements. By pinpointing those needing care, nurses ensure interventions to avert further decline or even save lives. This method improves outcomes and boosts emergency room efficiency by managing patient traffic efficiently. With their skills and unwavering commitment, ER nurses deliver top-notch care to anyone seeking assistance in the emergency ward.

Nurses have been and continue to be pivotal in safeguarding the public during and after these disasters, public health emergencies, and, most recently, the COVID-19 pandemic. In all phases of a disaster event, nurses, working with physicians and other healthcare team members, play a central role in the response. Before, during, and after disasters, nurses provide education, community engagement, and health promotion and implement interventions to safeguard public health. They provide first aid, advanced clinical care, and lifesaving medications; assess and triage victims; allocate scarce resources; and monitor ongoing physical and mental health needs. Nurses also assist with organizational logistics by developing operational response protocols and security measures and performing statistical analysis of individual- and community-level data. Basic knowledge about health system emergency preparedness is generally lacking

among nurses, including school nurses, who, as discussed above, are expected to play critical roles during public health emergencies. Gaps in education and training are evident in nursing leadership as well. The nation's nurses are unprepared for disaster and public health emergency response (ANA, 2023). Nurses are crucial in safeguarding public health during disasters, including the COVID-19 pandemic, by addressing the gaps in their education. However, there are significant gaps in their preparedness for emergency response due to a lack of education and training. Investing in their education and training is necessary to ensure they can respond effectively and protect public health. By supporting nurses, we can empower them to serve their communities better and keep us safe during times of crisis.

Professional preparation of nurses to manage disasters is critical to safe and effective rescue and response. Nurses in disaster settings must have clear leadership and rescue policies to ensure they can react to disaster situations (Li et al., 2017). Many nurses who have reported being part of disaster response teams experience psychological distress, which is exacerbated by a lack of effective management, communication mechanisms, and resources. In an era marked by significant global warming, natural disasters are becoming more prevalent, with occurrences such as earthquakes, tsunamis, volcanic activity, floods, and landslides occurring more frequently. In this context, possessing professional nursing skills in disaster response is paramount. In this context, possessing professional nursing skills in disaster response is paramount. During the more recent coronavirus (COVID-19) outbreak, nurses have been instrumental to the disaster response teams, relying on their clinical skills to adequately manage complex clinical demands in highly complex and volatile situations. All nurses must be responsive and be able to provide effective disaster relief (Li Xue et al., 2020).

Professional nursing skills in disaster response are indispensable, particularly in the face of increasing natural disasters because of global warming. Nurses play a pivotal role in disaster response teams, relying on their expertise to manage complex clinical demands in highly volatile situations, as evidenced by their crucial contributions during the COVID-19 pandemic (Hamdi, A. 2023). Given these challenges and responsibilities, all nurses must adequately prepare to deliver effective disaster relief. Underscores the critical need for ongoing training, equitable allocation of resources, and supportive systems to enable nurses to fulfil their roles effectively in disaster response efforts.

Strengthening nurses' capacity to aid in disaster preparedness and public health emergency response is fundamental to enhancing nursing's role in addressing and improving health and healthcare equity. Disaster management efforts are directed towards minimizing or preventing potential losses caused by hazards, ensuring timely and suitable assistance to those affected disaster victims, and achieving a rapid and effective recovery. Hospitals must remain safe and functional during and after disasters. Preparedness for front-line workers includes clinical skills and knowledge for providing patient care and protecting the public from becoming ill.

The increasing frequency of natural and environmental disasters and public health emergencies such as the COVID-19 pandemic highlight the critical importance of having

nursing professionals prepared with the knowledge, skills, and abilities to respond. Emergency room nurses give first aid, advanced clinical care, and lifesaving medications; assess and triage victims; allocate scarce resources; and monitor ongoing physical and mental health needs (University of Cincinnati, n.d., as cited on their website).

During the response, the most critical phase of disaster management is for nurses to activate the hospital disaster plan, triage cases, provide emergency treatment for injured people, help coordinate evacuations, and transport patients to other medical facilities. In diverse clinical settings and throughout every stage of a disaster, nurses collaborate with physicians and other healthcare team members, holding a central position in the response. Preceding, during, and following emergencies and disasters, nurses undertake tasks such as education, community engagement, health promotion, and intervention implementation to protect public health. Additionally, nurses contribute to organizational logistics by creating operational response protocols, implementing security measures, and conducting statistical analysis of patient data. The nurses activate organizational emergency operations plans, participate in incident command systems, oversee personal protective equipment (PPE) use, and provide crisis leadership and communications, often at risk to their health (Flaubert, 2021).

Their responsibilities include activating hospital disaster plans, triaging cases, providing emergency treatment, coordinating evacuations, and transporting patients to other medical facilities. Additionally, nurses engage in education, community outreach, and health promotion to safeguard public health before, during, and after emergencies. They also contribute to organizational logistics by developing response protocols, implementing security measures, and analysing patient data. Moreover, nurses assume leadership roles during crises, overseeing the use of personal protective equipment and facilitating communication, often at personal risk. It highlights the indispensable contribution of nurses in ensuring effective disaster response and underscores the importance of supporting their efforts to safeguard public health and safety.

Nurses' roles in pandemics and other infectious disease outbreaks are multifaceted and may include a) supporting and advising in epidemic surveillance and detection, such as contact tracing; b). working in point-of-distribution clinics to screen, test, and distribute vaccines and other medical countermeasures; c). employing prevention and response interventions; d) providing direct hospital-based treatment for impacted individuals; e). educating patients and the public to decrease the risk for infection; f) providing health systems and community-based leadership; and g) counseling and supporting community members to alleviate fear and anxiety (Veenema et al., 2020).

These diverse roles highlight nurses' significant contributions in responding to pandemics and infectious disease outbreaks, both in clinical settings and within communities. Nurses are multifaceted and indispensable in addressing pandemics and infectious disease outbreaks. Their involvement spans various aspects of epidemic management, including surveillance, prevention, treatment, education, and community support. In times of public health emergencies, nurses offer invaluable expertise and leadership, tirelessly working to ensure nurses diligently work to safeguard the health and

welfare of both individuals and communities during public health emergencies. Their dedication, compassion, and skills are instrumental in mitigating the spread of infectious diseases, supporting affected individuals, and alleviating fear and anxiety during times of crisis. The contributions of nurses in pandemic response underscore their invaluable role in promoting public health and ensuring the resilience of healthcare systems worldwide.

Infectious disease outbreaks have occurred more frequently and at a higher intensity over the past few decades. The healthcare system and individual front-line healthcare workers must be adequately prepared to respond to such events. Preparedness at the system level includes understanding the capacity of a hospital or health care system in advance of a potential public health emergency, including workforce capacity and capabilities and access to PPE, medical supplies, medical gases, and ventilators. It also requires organizing an action plan that includes the essential elements of managing the challenges such an event may impose on the institution. However, the preparedness of the U.S. healthcare system to manage a pediatric surge during a pandemic has been recognized as an essential improvement (Anthony et al., 2017). Recognizing the U.S. healthcare system's limitations in managing pediatric surges during pandemics highlights a critical gap. Healthcare systems must address these deficiencies promptly. This gap underscores the importance of addressing specific vulnerabilities within healthcare systems, particularly ensuring the readiness to respond effectively to pediatric populations' unique needs and challenges during infectious disease outbreaks. By recognizing and addressing these deficiencies, healthcare systems can better protect the health and well-being of all individuals, including vulnerable populations, during public health emergencies.

Nurses have experienced significant psychological and moral distress during the pandemic. Results of a survey conducted by the American Nurses Association (ANA, 2020) reveal that 87 percent of nurses were afraid to go to work, 36 percent had cared for an infectious patient without having adequate PPE, and only 11 percent felt well prepared to care for a patient with COVID-19. It also revealed intermittent shortages of PPE for nurses persisted seven months into the pandemic, particularly for those working in smaller rural hospitals, home care, and palliative care. Nurses were asked to extend and reuse N95 masks long after the CDC’s recommended guidelines. Nurses working in long-term care facilities, home care, palliative care, and small rural hospitals were particularly vulnerable as caregivers in environments with high risk and high mortality (ANA, 2020).

The American Nurses Association (ANA) survey in 2020 sheds light on the immense challenges nurses face during the pandemic. Their psychological and moral distress, inadequate access to personal protective equipment (PPE), and the need to reuse N95 masks highlight the critical issues they encountered. Despite these obstacles, nurses demonstrated unwavering dedication and resilience while caring for patients in high-risk environments. Reflecting on their sacrifices, we must recognize and support their tireless efforts. The results emphasize the pressing requirement for enhanced preparedness, adequate PPE supply, and mental health support for healthcare

professionals. As we move forward, addressing these issues will be crucial to ensuring the well-being of our frontline heroes.

COVID-19 is one example of the significant burden imposed by disasters and public health emergencies on the health of populations, healthcare professionals, and nurses. The pandemic has created multiple challenges, particularly in managing its effects across diverse and highly vulnerable populations and exacerbated existing health inequities. Future natural disasters and infectious disease outbreaks will present similar, if not more significant, challenges for nursing. Bold, anticipatory action is needed to advance nurse readiness for these events (Flaubert, 2021). By addressing these challenges, proactive preparation, ongoing education, and collaboration are essential for nurses to meet the challenges posed by future emergencies. By taking bold and anticipatory action, we can enhance nurse readiness and strengthen overall public health outcomes.

The need for emergency care services is predicted to remain high, as manifested by the crowding phenomenon in emergency departments (EDs). This has impacted the decreasing quality of care and treatment, the increased adverse event rate, and the increased mortality rate in Emergency Departments. The availability of clear emergency nurses' competencies is critical for safe and effective emergency health care services. Safe and effective emergency care services can be linked to the availability of clear nurse competency. Clear competency for nurses in ED settings is needed as it describes the essential abilities to accomplish the nurses' role in an emergency (Trisyani et al., 2019). By establishing clear competency standards, healthcare organizations can ensure that their emergency nurses are adequately prepared to handle the challenges they may encounter in the ED, including clinical skills, communication, critical thinking, and decision-making abilities, all of which are essential for delivering safe and effective care to patients in emergency settings. Ultimately, having clear nurse competencies in the ED improves patient outcomes and enhances the overall quality of emergency care services. Well-defined nurse competencies empower emergency nurses to provide high-quality care, even in challenging situations.

There are still gaps in disaster preparedness and core competencies for emergency nurses that must be addressed. Nursing managers must support an improvement in nursing disaster core competencies. This may be done by conducting sessions for routine disaster scenarios and providing formal disaster preparedness training. Analysis results indicated that nursing disaster core competencies were perceived better by older nurses who had experience in the disaster stage and nurses with disaster response experience and lower professional experience. Nurses with a post-diploma degree and bachelor's degree were perceived to have lower disaster core competency than nurses with a master's or Ph.D. degree (Chegini et al., 2020). Nursing managers should prioritize supporting the improvement of disaster core competencies among their teams through training initiatives and hands-on experience. By addressing these gaps and ensuring that nurses are adequately prepared, healthcare organizations

can enhance their resilience, and we can better serve our communities during emergencies.

The study of Naser et al. (2018) on the knowledge, skills, and attitudes of Yemeni professionals found that they needed more preparedness for emergencies and disasters. The respondents needed to exhibit better knowledge. The educational level was a critical factor in the knowledge gap among respondents. Regardless of the period of experience, postgraduate staff were more knowledgeable than graduates. Most study respondents showed a positive attitude level toward emergency and disaster preparedness.

Labrague et al. (2018) found that factors that increase preparedness for disaster response include previous disaster response experience and disaster-related training. Nurses need to be more prepared and feel confident responding effectively to disasters. Despite growing initiatives to prepare nurses for any disasters, evidence suggests they need to prepare for disaster response.

The study conducted by McNeill et al. 2020 on nurses' preparedness during disasters indicates significant weaknesses in nurses' professional emergency preparedness competence. Positive correlations exist between the likelihood to report, personal preparedness, and professional emergency preparedness competence. Nurses across the United States need more competence in professional emergency preparedness.

Al Harti et al. (2020) found in their study that nurses need to be prepared to respond immediately to reduce the impact of disasters. However, nurses face several challenges in all phases of disaster management. Significant barriers facing nurses include the following: inadequate level of preparedness, poor formal education, lack of research, ethical and legal issues, and issues related to nurses' roles in disasters. Educators, researchers, and stakeholders must tackle these issues and improve disaster nursing.

The National Library of (Medicine, 2019) found that the nation's nurses must prepare for disaster and public health emergency response. A bold and expansive effort, executed across multiple platforms, will be needed to fully support nurses preparing for disaster and public health emergency response. It is essential to convene experts who can develop a national strategic plan articulating the existing deficiencies and safeguards taken. Rapid action is needed across nursing education, practice, policy, and research to address the gaps in nursing's disaster preparedness and improve its capacity to advocate for population health and health equity during such events. Underscore the need for immediate and concerted efforts to bolster nurses' preparedness for disaster and public health emergency response. Addressing these challenges is essential for strengthening the resilience of the healthcare system and ensuring the well-being of communities in times of crisis.

Hospitals and their Emergency Departments (ED) are at risk for crises and their potential escalation to hospital disasters. Emerging risks due to climate-related

emergencies, infectious disease outbreaks, terrorism, and cyber-attacks pose threats. If a hospital is not ready, it undermines the capacity of administration and staff to safeguard the safety of patients. Therefore, hospitals and their EDs must check and enhance their preparedness for these contingencies (Barten et al., 2021). Hospitals and their Emergency Departments (EDs) must regularly evaluate and, if needed, improve their preparedness for such contingencies. It involves establishing comprehensive emergency response plans, ensuring ample availability of resources and supplies, conducting regular training exercises, and establishing efficient internal and external communication channels. By prioritizing preparedness measures, hospitals can mitigate the impact of potential crises or disasters and ensure their patients' safety and continuous care. Collaborating with local authorities, healthcare partners, and community organizations is essential in building a resilient healthcare system that addresses diverse emergencies and hazards.

Their study on the challenges nurses encounter in the emergency room identified several significant challenges confronting nurses working in the emergency unit: managerial processes and inadequate managerial support. These challenges need to be addressed to promote quality emergency nursing care. Hospital management should validate and address the concerns of the Emergency Department nurses (Afaya et al., 2021). The research on the challenges nurses face in the emergency room highlighted several significant obstacles that nurses encounter in this setting, particularly those associated with managerial processes and a lack of sufficient managerial support. These challenges are critical to address to enhance the quality of emergency nursing care. Hospital management must acknowledge and tackle the concerns nurses in the Emergency Department raise. By doing so, management can empower nurses to provide better patient care and improve the general outcomes in the emergency room setting.

The researcher conducted the study since he was assigned to the emergency room. He wants to determine nurses' knowledge, skills, and attitudes in emergencies and disasters, just like what transpired in the past years regarding the incidence of emergency conditions during the COVID-19 pandemic.

Theoretical/ Conceptual Framework

The study adopted the Emergency management theory. This theory studies how to prevent, prepare, respond, and recover from disasters and emergencies. It draws on various disciplines to understand complex and uncertain situations' causes, effects, and solutions. The study adopted the theory because it focused on emergencies, which are nurses' knowledge, skills, and attitudes during emergencies and disasters.

It also utilized the Virginia Henderson theory on nursing needs, which conceptualized the nurse's role as assisting sick or healthy individuals to gain independence in meeting 14 fundamental needs.

The theory suggests that individuals have fundamental needs integral to their health, and they may require assistance to attain health and independence or experience a peaceful death. Nurses apply this theory in the emergency room setting as they provide support and care to needy patients.

The study assessed the nexus of the knowledge, skills, and attitudes in emergency and disaster response among emergency room nurses in government hospitals in Eastern Pangasinan. Box number 1 is the input that deals with the profile of the respondents and the nexus of the knowledge, skills, and attitudes in emergency and disaster response among emergency room nurses. Box number 2 is the process that deals with data gathering, interpretation, and analysis. Box number 3 is the Output focusing on the proposed training program to improve emergency room nurses' knowledge, skills, and attitudes in emergency and disaster response.

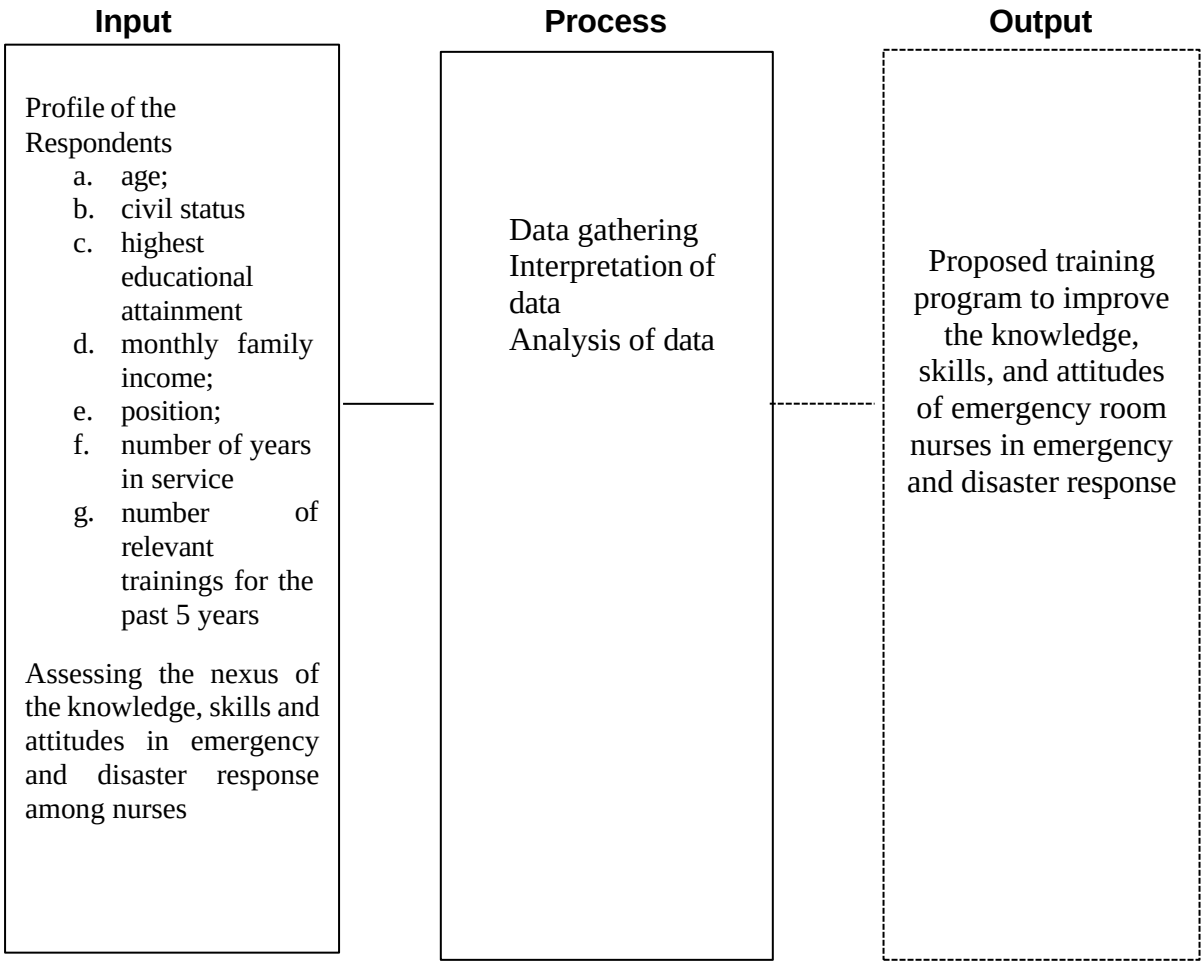


Figure 1. Research Paradigm

RESEARCH QUESTIONS

This study determined the nexus of the knowledge, skills, and attitudes in emergency and

disaster response among emergency room nurses in government hospitals in Eastern Pangasinan.

Specifically, it sought to answer the following questions:

1. What is the profile of the respondents in terms of their;
    a. age;
    b. civil status;
    c. highest educational attainment;
    d. monthly family income;
    e. position;
    f. number of years in service; and
    g. relevant trainings attended in emergency and disaster nursing for the past five years?
2. What are the nexus in emergency and disaster response among the emergency room nurses along;
    a. knowledge;
    b. skills; and,
    c. attitude?
3. Is there a significant difference between the nexus of knowledge, skills, and attitudes of the respondents on emergency and disaster response across their profile variables?
4. Is there a significant relationship between the nexus of the knowledge, skills, and attitudes of the respondents on emergency and disaster response across their profile variables?
5. Based on the findings, what proposed training program can be formulated to improve the knowledge, skills, and attitudes of the respondents in emergency and disaster the response among ER nurses?

Null Hypothesis

The study was tested in its null form at a 0.05 level of significance;

1. There is no significant relationship between the nexus of the respondents' knowledge, skills, and attitudes in emergency and disaster response across their profile variables.
2. The nexus of the respondents' knowledge, skills, and attitudes on emergency and disaster response across their profile variables is the same.

METHODOLOGY

This chapter explains the research methodology, which includes discussions on the research design, study participants, sampling strategy, data collection instruments, data collection procedures, statistical data treatment, and tools employed for data analysis.

Research Design

The study employed descriptive research methodology using the questionnaire as a data-gathering tool to determine the nexus of the respondents' knowledge, skills, and attitudes in emergency and disaster response in the emergency room. According to Calderon (2018) descriptive research is a purposive process of gathering, analyzing, classifying, and tabulating data about prevailing conditions, practices, beliefs, processes, trends, and cause effect relationships and the making adequate and accurate interpretation about such data with or without the aid of statistical methods. Descriptive research this type of research describes what exists and may help to uncover new facts and meaning. The purpose of descriptive research is to observe, describe and document aspects of situation as it naturally occurs. This involves the collection of data that will provide an account or description of individuals, groups, or situation.

Population and Locale of the Study

The study's respondents were 50 emergency room nurses employed in 5 selected hospitals in Eastern Pangasinan. Purposive sampling was used to represent the population, and the sample was delimited to those nurses assigned to the emergency room. The study was conducted during the second semester of 2023-2024.

Data Gathering Tool

The study utilized a survey questionnaire based on previous studies and articles related to the study. Part I focused on the respondents' profiles regarding their age and civil status, highest educational attainment, monthly family income, position, number of years in service, and relevant seminars on emergencies and disasters for the past five years. Part II tackled the nexus of the knowledge, skills, and attitudes in emergency and disaster response among ER nurses.

Validation of Instrument

The questionnaire was employed to collect data from the respondents. The questionnaire items were derived from various articles and research studies concerning knowledge, skills, and attitudes in emergency and disaster response among emergency room nurses. However, it underwent validation by experts in emergency nursing, including a faculty researcher, an instructor specializing in emergency and disaster

nursing, and emergency room nurses. The combined rating indicated a high level of validity.

Data Gathering Procedures

Before gathering data, the researcher secured permission from the Dean of the Institute of Graduate and Advanced Studies to conduct the study. When permission was granted from the Institute of Graduate and Advanced Studies, the researcher requested and coordinated with the Chief of Hospitals through the Chief Nurses for permission to conduct the study. After securing the permission, the researcher secured consent from the respondents. Data was gathered personally by the researcher in the Second semester of 2023-2024.

Treatment of Data

Frequency and percentage were used for Problem No.1 on the respondent's profile.

The frequency was determined based on the number of respondents who answered or checked a particular item on the questionnaire.

Formula: $P = \frac{F \times 100}{N}$

where: P = percentage

F = frequency

N = total number of respondents

Problem No. 2 on the nexus of the knowledge, skills, and attitudes on emergency and disaster response among emergency room nurses weighted mean using the five-point Likert scale.

Literal Value	**Statistical Limit**	**Descriptive Equivalent**	**Transmuted Rating**
A	4.50 – 5.00	Always	Highly Knowledgeable
B	3.50 – 4.49	Often	Knowledgeable
C	2.50 – 3.49	Sometimes	Moderately Knowledgeable
D	1.50 – 2.49	Seldom	Slightly Knowledgeable
E	1.00 – 1.49	Never	Not Knowledgeable

For the nexus of emergency and disaster response skills among emergency room nurses, a weighted mean was used using the five-point Likert scale.

Literal Value	Statistical Value	Descriptive Equivalent	Transmuted Rating
A	4.50 – 5.00	Always	Highly Skillful
B	3.50 – 4.49	Often	Skillful
C	2.50 – 3.49	Sometimes	Moderately Skillful
D	1.50 – 2.49	Seldom	Slightly Skillful
E	1.00 – 1.49	Never	Not Skillful

For the nexus of emergency room nurse practices on emergency and disaster response, the weighted mean was used using the five-point Likert scale.

Literal Value	Statistical Value	Descriptive Equivalent
A	4.50 – 5.00	Always
B	3.50 – 4.49	Often
C	2.50 – 3.49	Sometimes
D	1.50 – 2.49	Seldom
E	1.00 – 1.49	Never

The weighted mean is the mean of a set of values wherein each value or measurement has a different weight or degree of importance.

Formula: $\overline{x} = \frac{\sum fi}{N}$

where: "$\bar{x}$" = weighted mean

N = total # of population; and

fi = frequencies corresponding to the given items.

For Problems Nos. 3 and 4, on the significant relationships and differences between the nexus of the respondents' knowledge, skills, and attitudes in emergency and disaster response, Analysis of Variance was used to test the difference. In contrast, Chi-Square was used to test the relationship between variables.

Analysis of Variance (ANOVA)

$$F = \frac{MSb}{MSw}$$

Where:

MSb - Mean Square Between

MSw - Mean Square Within

Chi-Square

$$X^2 = \sum \frac{(O-E)^2}{E}$$

Where: O =observed number of cases

$$E = \frac{\text{(row total)} \quad \text{(column total)}}{\text{Grand total}}$$

RESULTS AND DISCUSSIONS

Part 1. Respondent's Profile

Table 1 presents the profile of the respondents in terms of their age, civil status, highest educational attainment, position, monthly family income, number of years in service, and number of relevant trainings on emergency and disaster.

Age. It can be gleaned from the table that most respondents are in the age bracket of 31-40 years old, with a frequency of 34, or 68 percent, followed by 21-30 and 41-50, with a frequency of 8, or 16 percent. It revealed that the respondents were young adults. The data presented indicates a significant concentration of respondents within the 31-40 age bracket; this shows a substantial concentration of respondents in this age group, which aligns with Erikson's psychosocial stages of development. Erikson emphasizes the importance of forming personal connections. Establishing intimate relationships is considered a marker of success in this developmental phase; according to Erikson, 31-40-year-olds are considered young adults and emphasize the importance of forming personal connections. Young adults need to create intimate, loving relationships with other people. Success leads to strong relationships, while failure results in loneliness and isolation. This stage covers the period of early adulthood when people are exploring personal relationships. (McLeod 2024). The concentration of respondents within the 31-40 age bracket underscores the importance of considering developmental stages and psychosocial factors when analyzing workforce dynamics and designing interventions to promote professional fulfillment and quality patient care underscores the importance of considering developmental stages and psychosocial factors when analyzing workforce dynamics and designing interventions to promote professional fulfillment and quality patient care.

Table 1
Distribution of Respondents in Terms of their Profile Variables
n=50

Profile Variables	Frequency	Percentage
Age (in years)		
21 – 30	8	16.0
31 – 40	34	68.0
41 – 50	8	16.0
Civil Status		
Single	32	64.0
Married	18	36.0
Highest Educational Attainment		
Bachelor's Degree	30	60.0
With Master's units	17	34.0
Master's Degree	3	6.0
Position		
Staff Nurse	45	90.0
Supervisor	2	4.0
Head Nurse	3	6.0
Monthly Family Income (in Php)		
Below P15,000	7	14.0
15,001-25,000	30	60.0
35,001-45,000	13	26.0
Number of Years in Service		
Below 1 year	6	12.0
1 – 2	8	16.0
3 – 4	9	18.0
5 and above	27	54.0
Number of Relevant Trainings on Emergency and Disaster		
1 – 2	34	68.0
3 – 4	8	16.0
5 and above	8	16.0

Civil status. Most respondents were single, with a frequency of 32, or 64 percent, followed by married, with a frequency of 18, or 36 percent. It revealed that the respondents were not into marital relationships and were pursuing their experiences in

their field of assignment. Being single gives you a unique opportunity to discover yourself deeply. It underscores the positive aspects of being single, suggesting it can lead to a more optimistic outlook. This perspective is valuable, especially in a society that prioritizes marital relationships. It is essential to recognize that being single is not just a status but an opportunity for self-discovery and setting one's path. You can shape a life that reflects your unique priorities and then seek companionship to share it with. According to Shockley and Allen (2012), employees with a spouse and/or children typically have more life duties compared to their single counterparts. However, it is essential to recognize that every individual's circumstances vary, and there are numerous factors beyond marital status and parenthood that can impact an employee's workload and life responsibilities.

Highest educational attainment. It revealed that most respondents were bachelor's degree holders, with a frequency of 30 or 60 percent, followed by those with master units, with a frequency of 17 or 34 percent, and MAN degree, with a frequency of 3 or 6 percent. It showed that many respondents needed to pursue a higher level of learning. This trend could be attributed to the lack of competitiveness in their salaries, resulting in nurses opting out of pursuing master's or doctoral programs, so some nurses fail to enroll in the master's or doctoral program. Notably, most hold a bachelor's degree, which suggests a solid foundation of professional education. As per the Department of Labor and Employment (DOLE), an entry-level registered nurse receives an average monthly salary of P8,000 to P13,500. Registered nurses hired by hospitals commonly receive an average wage of P9,757 a month. Despite this, the financial challenges may persist, affecting nurses' decisions to pursue further education. Healthcare workers' occupations inherently expose them to the risk of contracting various diseases, including the lethal COVID-19. Despite receiving low wages, nurses stay in the profession to help save lives (Magsambol, 2020). This data highlights the importance of addressing financial barriers to higher education for nurses and recognizing their dedication to providing quality care despite their challenges.

Position. It is definable that most respondents were ER staff nurses, with a frequency of 45 or 90 percent, Head nurses, with a frequency of 3 or 6 percent, and Nurse Supervisors, with a frequency of 2 or 4 percent. It indicates more rank-and-file staff nurses than supervisors, consistent with the usual arrangement in many healthcare settings. In these settings, most nursing workforce consists of staff nurses directly engaged in patient care duties. Their role is vital as they are often the first point of contact for patients, and they have a significant role in assessing and monitoring their condition and providing the necessary care and support for recovery. According to Peters (2021), a staff nurse is a registered nurse who provides high-quality care to patients at the bedside, residents of nursing homes, or in a hospital. They are responsible for initial patient assessment, monitoring patients' vital signs, and nurturing patients to recovery.

Monthly family income. It showed that most respondents received an income of P15,001-P25,000, with a frequency of 30, or 60 per cent, P35,001-P45,000, with a frequency of 13, or 26 per cent, P20,001-30,000 and below P15,000, with a frequency of 7, or 14 per cent. It revealed that the respondents received an average monthly income

and suggested that while earning an average income, meeting the necessary living standards may still be challenging, especially considering the cost of living and inflation rates. Pernia, a socio-economic planning secretary of NEDA, says a family of four needs a decent monthly income of P42,000 to live above the poverty line (Castillo, 2018). The data underscores the importance of addressing income disparities and ensuring that healthcare professionals, including nurses, receive fair compensation for their essential work. It is crucial for their well-being and sustaining a healthy and productive workforce in the healthcare sector.

Number of years in service. It can be gleaned that most of the respondents were in the service for five years and above, with a frequency of 27, or 54 per cent, 3-4, with a frequency of 9, or 18 per cent, 1-2, with a frequency of 8, or 16 per cent, and below one year, with a frequency of 6, or 12 per cent. It reflects that the respondents were in the service longer as staff nurses. Length of service is essential in the workplace because it can influence job satisfaction, work performance, and employee retention. The data underscores the importance of recognizing and valuing the experience and dedication of nurses who have served for extended periods. Supporting and retaining experienced staff nurses can contribute to a more stable and effective healthcare workforce, ultimately benefiting patient care outcomes. According to Faster Capital (n.d.), the concept of employee loyalty has been an essential part of the employer-employee relationship for a long time. It is a two-way street where employees who are loyal to their companies tend to stay longer, work harder, and promote organizational culture. Extensive tenure within a workplace not only fosters job security but also cultivates a profound sense of loyalty between employees and employers. Furthermore, it correlates with the accumulation of invaluable experience and expertise, leading to enhanced work performance and heightened quality of care delivered by nurses. These findings underscore the significance of acknowledging and appreciating the dedication and experience of long-serving nurses. By nurturing and retaining seasoned staff members, healthcare facilities can bolster the stability and efficacy of their workforce, thereby positively impacting patient care outcomes.

Relevant training on emergency and disaster. Most respondents had undergone training 1-2 times, with a frequency of 34, or 68 per cent, 3-4, and 5 and above, with a frequency of 8, or 16 per cent. This revealed that the respondents needed adequate training in emergency and disaster. The findings are like those of the National Library of Medicine (2019), where the nurses were unprepared for disasters and public health emergency responses. Nurses must be well-prepared for emergencies, as they are often on the front lines of response. Improving nurses' readiness for disaster response enhances their capacity to aid in emergencies, addresses social determinants of health, and improves healthcare equity.

Part II. Nexus of the Knowledge, Skills, and Attitudes in Emergency and Disaster Response Among Nurses

Table 2 - 4 presents the nexus of the knowledge, skills, and attitudes of emergency and disaster response among nurses.

Table 2
Knowledge in Emergency and Disaster Response Among Nurses
n=50

Indicators	WM	TR
1. I know the advanced equipment to monitor and treat patients.	4.42	K
2. I prioritize care based on the patient's needs.	4.80	HK
3. I provide urgent assistance by delivering the crash cart, giving CPR, using defibrillators, ventilating the patient, and administering IV fluids.	4.64	HK
4. I assist the doctors with diagnostic procedures and tests.	4.60	HK
5. I transfer patients from the ER when they are in stable condition.	4.64	HK
6. I treat patients with life-threatening overdoses or severe trauma from accidents or violence.	4.32	K
7. I assess patients' conditions, determine the next steps for treatment, and coordinate with other team members, patients, and family members.	4.62	HK
8. I evaluate patients, offer emergency support such as first aid and cardiopulmonary resuscitation (CPR), and work with law enforcement to confirm the facts of the event.	4.48	K
9. I perform evaluations, determine the risk level, prioritize high-risk patients, and work with other care providers to initiate treatment and care.	4.60	HK
10. I provide urgent care, such as medication administration and intravenous (IV) fluids, communicate with parents, and treat patients and their families compassionately to manage their situations' emotional burdens.	4.66	HK
AWM	**4.58**	**HK**

Legend:

Statistical Value	Transmuted Rating (TR)
4.50 – 5.00	Highly Knowledgeable (HK)
3.50 – 4.49	Knowledgeable (K)
2.50 – 3.49	Moderately Knowledgeable (MK)
1.50 – 2.49	Slightly Knowledgeable (SK)
1.00 – 1.49	Not Knowledgeable (NK)

As gleaned from the table, the highest indicators are "I prioritize care based on the patient needs" and "provide urgent care, such as medication administration and

intravenous (IV) fluids, communicate with parents, and treat patients and their families with compassion to manage the emotional burdens of their situations," with a weighted mean of 4.66 and 4.80, or "Highly Knowledgeable." It reflects that the respondents practiced prioritization in giving their care to patients, especially in the ER, where it is the first step the patients take during admissions. When assigned to the ER, the nurses knew what they did and the patient's needs. According to Pavedahl et al. (2022), ER nurses must structure their work based on the prevailing conditions to meet patients' fundamental care needs. The organizational structure clearly states that fundamental care should be performed in the emergency room, and the registered nurses' approach to meeting patients' primary care needs is adapted to provide patients with person-centered care.

The lowest indicators are "I am aware of the advanced equipment to monitor and treat patients" and "I treat patients with life-threatening overdoses or severe trauma from accidents or violence," with a weighted mean of 4.32 and 4.42, or "Knowledgeable." It showed that the ER nurses are aware of the operation of equipment used in life-threatening and critical conditions. The indicators reflect an excellent awareness among ER nurses regarding operating advanced equipment for monitoring and treating patients in crucial situations. Nowadays, hospitals are up to date with new technologies and gadgets used in patient care, and the nurses are trained on this equipment before using it with patients. Several technological innovations have been introduced in healthcare over the years, and their implementation has proved crucial in addressing the challenges of modern health. Nurses have been called upon to become familiar with technological innovations that pervade every aspect of their profession, changing their working schedules, habits, and daily actions (Barchchielli et al., 2021). There are areas for improvement in ER nurses' awareness of advanced equipment and their confidence in treating critical conditions, but the overall level of knowledge remains commendable. Continued emphasis on training and integrating technological innovations into nursing practice will further enhance patient care outcomes and strengthen the role of nurses in modern healthcare delivery.

Overall, nurses' emergency and disaster response knowledge got an average weighted mean of 4.58, or "Highly Knowledgeable." It connotes that the ER nurses are trained to give the necessary care to respond during emergencies. It suggests that ER nurses possess a high level of expertise and are well-prepared to handle emergencies, which is critical for effective patient care in high-stress situations. They are familiar with the policies and procedures in the ER. Nurses must have different competencies in responding to emergencies and during disasters. As mentioned, the Core Competency Standards of the Board of Nursing emphasize the importance of having a well-defined skill set to ensure nurses are equipped to respond to various clinical scenarios, including emergencies and disasters. These competencies cover a broad range of skills, from clinical knowledge to communication and leadership abilities, all of which contribute to the overall effectiveness of the emergency response and every nurse must adopt the competencies.

Additionally, it presents the skills in emergency and disaster response among ER nurses. As gleaned from the table, the highest indicators are “I immediately assess and triage victims needing emergency care,” “I provide emergency treatment for injured people and other victims of disasters,” and “I render first aid and advanced clinical care to patients rushed to the emergency room” with a weighted mean of 4.62 and 4.70, or “Highly Skillful.” It reflects that the nurses do an immediate assessment of their patients. Triage in the emergency room is a critical process that helps medical professionals prioritize patients based on the urgency of their conditions. It ensures that those who need immediate attention receive it promptly, which can be lifesaving in critical situations. According to Yancey and O’Rourke (2023), triage is utilized in the emergency room to categorize patients based on the severity of their injuries and, by extension, the order in which multiple patients require immediate care and monitoring.

Table 3
Skills in Emergency and Disaster Response Among Nurses
n=50

Indicators	WM	TR
1. I immediately assess and triage victims needing emergency care.	4.70	HS
2. I allocate scarce resources and make sure immediate care is provided.	4.54	HS
3. I provide emergency treatment for injured people and other victims of disasters.	4.62	HS
4. I coordinate evacuations and the transfer of patients to other medical facilities.	4.40	S
5. I assure prompt and appropriate assistance to the victims of a disaster or any emergencies.	4.42	S
6. I monitor emergency patients and their immediate family members' ongoing physical and mental health needs.	4.44	S
7. I render first aid and advanced clinical care to patients who are rushed to the emergency room.	4.62	HS
8. I abide by organizational logistics by developing operational response protocols and security measures.	4.44	S
9. I use personal protective equipment (PPE) to prevent possible exposure to body discharges and fluids of patients in the emergency room.	4.52	HS
10. I employ prevention and response interventions for all victims of emergencies and disasters.	4.48	S
AWM	**4.52**	**HS**

Legend:

Statistical Limit	Transmuted Rating (TR)
4.50 – 5.00	Highly Skillful (HS)
3.50 – 4.49	Skillful (S)
2.50 – 3.49	Moderately Skillful (MS)
1.50 – 2.49	Slightly Skillful (SS)

1.00 – 1.49 Not Skillful (NS)

The indicators with the lowest scores are "I coordinate evacuations and the transfer of patients to other medical facilities" and "I ensure that victims of disasters or any emergencies receive prompt and appropriate assistance," both rated as "Skillful" with a weighted mean of 4.40 and 4.42, respectively. It showed that the ER nurses have the skills to properly evacuate and transfer patients to more prominent hospitals. According to Melnychuk et al. (2022), hospitals are a vital component of disaster response but are susceptible to the effects of disasters, including infrastructure damage that disrupts patient care. When hospitals are directly affected by a disaster, these events offer an opportunity for evacuation and transfer, evaluation, and improvement of preparedness and response efforts.

Overall, the skills in emergency and disaster response among nurses got an average weighted mean of 4.52, or "Highly Skillful." It connotes that the ER nurses knew the different procedures used in the emergency room to respond to disasters and other critical conditions. It contradicts the findings of Labrague et al. (2018) that nurses need to be prepared to answer during disasters. Nevertheless, while the findings are promising, continuous efforts should be made to enhance nurses' preparedness and skills in disaster response. Ongoing training, regular drills, and collaboration with other emergency responders can help nurses remain adept at managing critical situations and providing optimal patient care during emergencies and disasters. Continuous improvement in nurses' preparedness and skills in disaster response is vital to ensure effective patient care during emergencies and disasters. Although the current results show promise, continuing sustained efforts in this area. Regular training sessions, drills, and collaboration with other emergency responders can significantly enhance nurses' readiness to manage critical situations. Through continuous skill enhancement and adherence to best practices, nurses can substantially contribute to alleviating the repercussions of disasters on public health and safety.

Table 4 presents the attitudes in emergency and disaster response among nurses.

4
Attitudes in Emergency and Disaster Response among Nurses
n=50

Indicators	WM	DE
1. I practice teamwork as a positive and effective construct in the emergency room.	4.82	A
2. I build a resilient team with strong leadership and communication skills, which are essential to withstand the challenging demands of the emergency room.	4.60	A
3. I observe professionalism in the context of the behaviors and actions displayed during an episode of care delivery.	4.74	A

4. I contribute knowledge, practice changes, or other aspects of health care to benefit those who receive nursing care in the emergency room.	4.68	A
5. I focus on the changing healthcare system in the emergency room, establish goals, and meet the challenges to accomplish care for emergency and disaster victims.	4.54	A
6. I consider lifelong learning as an essential component of nursing practice, particularly in the emergency room	4.70	A
7. I stimulate professional growth and foster a vibrant practice environment in the emergency room.	4.62	A
8. I strive to engage in emergency room practice with an open, inquiring mind that formulates and pursues answers to clinical and operational questions.	4.74	A
9. I perform nursing actions primarily based on doctors' orders	4.66	A
10. I contribute to the profession through ongoing self-development, accountability, mentoring, advocacy, and involvement in the emergency room.	4.72	A
	4.68	**A**

Legend:

Statistical Limit	**Descriptive Equivalent (DE)**
4.50 – 5.00	Always (A)
3.50 – 4.49	Often (O)
2.50 – 3.49	Sometimes (So)
1.50 – 2.49	Seldom (S)
1.00 – 1.49	Never (N)

As gleaned from the table, all the indicators were rated with a descriptive equivalent of "Always," however the highest indicators are item numbers 1, 3, and 8, "I practice teamwork as a positive and effective construct in the emergency room," "I observe professionalism in the context of the behaviors and actions displayed during an episode of care delivery," and "I strive to engage in emergency room practice with an open, inquiring mind that formulates questions and pursues answers to clinical and operational questions," with a weighted mean of 4.82 and 4.74, and a descriptive equivalent of "Highly Always." It reflects that ER nurses observe teamwork with other health team members. Nurses need clear and effective communication with patients, their relatives, and the medical team to ensure everyone is on the same page about the patient's health status and requirements.

The lowest indicator is item 5, “I focus on the changing health care system in the emergency room, establish goals, and meet the challenges to accomplish care to emergency and disaster victims,” with a weighted mean of 4.54 and a descriptive equivalent of “Always.” its shows that ER nurses encounter challenges, but this does not hinder them from performing their tasks to save lives.

Overall, nurses' attitudes toward emergency and disaster response got an average weighted mean of 4.68 and a descriptive equivalent of "Always." it indicates that the ER nurses showed the proper attitudes toward responding to emergencies and disasters. Situations can evolve rapidly in the emergency room, necessitating that ER nurses adapt to these changes and make prompt decisions to deliver the best possible care to their patients.

Moreover, it presents the knowledge, skills, and attitudes in emergency and disaster response among nurses.

Summary of the Knowledge, Skills, and Attitudes in Emergency and Disaster Response Among Nurses

As gleaned from the table, the indicators were rated “Highly Practiced,” “Highly. Skillful,” and “Always.” Still, the highest aspect is attitude, with a weighted mean of 4.68 and a descriptive equivalent of “Always.” It is followed by “Knowledge,” with a weighted mean of 4.58, or “Highly Knowledgeable.” The emergency room is a high-pressure environment that comes with its own set of challenges. Emergency room (ER) nurses must be able to make rapid decisions, often with limited information and under stressful conditions. They must be able to prioritize effectively, balancing the needs of multiple patients simultaneously.

Table 5
Summary of the Knowledge, Skills, and Attitudes in Emergency and Disaster Response Among Nurses
n=50

Aspect	WM	TR
Knowledge	4.58	HK
Skills	4.52	HS
Attitude	4.68	A

Legend:

Statistical Range	Transmuted Rating
4.50 – 5.00	Highly Knowledgeable (HK)/Highly Skillful (HS)/ Always (A)
3.50 – 4.49	Knowledgeable (K) / Skillful (S) / Often (O)
2.50 – 3.49	Moderately Knowledgeable (MK) / Moderately Skillful (MS) / Sometimes (So)
1.50 – 2.49	Slightly Knowledgeable (SK) / Slightly Skillful (SS) /Seldom (S)
1.00 – 1.49	Not Knowledgeable (NK) / Not Skillful (NS) / Never (N)

The lowest aspect is on “Skills,” with a weighted mean of 4.52, or “Highly Skillful.” It revealed that the ER nurses had the skills to attend to emergencies and disaster responses. ER nurses receive training to quickly assess patients upon arrival, gather vital information, and identify any signs or symptoms that require immediate attention.

Overall, nurses' attitudes in emergency and disaster response got an average weighted mean of 4.68 and a descriptive equivalent of "Always." It connotes that the ER nurses knew the skills and attitudes needed to handle patients brought to the ER. According to Labrague et al. (2016), 80% of Filipino nurses suggested needing more time to respond to disasters. It contradicts the findings that the ER nurses were knowledgeable in handling emergencies and disasters.

Part III. Results Stressing the Difference in the Knowledge, Skills, and Attitudes in Emergency and Disaster Response Among Nurses

Table 6 -14 presents the differences in the knowledge, skills, and attitudes in emergency and disaster response among nurses.

Table 6
ANOVA Results on the Difference in the Knowledge, Skills, and Attitudes in Emergency and Disaster Response Among Nurses Across Age

Aspect	Source of Variation	Sum of Squares	df	Mean Squares	F-value	Sig	Remarks
Knowledge	Between Groups	.706	2	.353	2.661	.080	Not Significant
	Within Groups	6.239	47	.133			
	Total	6.946	49				
Skills	Between Groups	.598	2	.299	1.397	.257	Not Significant
	Within Groups	10.056	47	.214			
	Total	10.654	49				
Attitudes	Between Groups	.583	2	.291	2.028	.145	Not Significant
	Within Groups	6.751	47	.144			
	Total	7.334	49				

The computed F-values show no significant difference in the nurses' knowledge, skills, and attitudes when grouped according to age. This means that age does not affect nurses' knowledge, skills, and attitudes regarding emergency and disaster response. It implies that ER nurses have comparative knowledge, skills, and attitudes when dealing with emergencies and disasters, regardless of age. It is related to the study of Nofal et al. (2018), which found that nurses below 30 years old level of knowledge were satisfactory with a neutral level of attitude, practice, and familiarity regarding disaster preparedness. This finding implies that ER nurses exhibit comparable levels of knowledge, skills, and attitudes regardless of their age. It highlights the consistency in preparedness and capabilities among nurses in managing emergencies and disasters, irrespective of their age group. It underscores the effectiveness of training programs and ongoing professional development initiatives to ensure nurses possess the necessary competencies to respond effectively to emergencies across all age demographics.

Table 7 shows the difference in the knowledge, skills, and attitudes in emergency and disaster response among nurses across civil status. The computed t-values generated significance values higher than the set .05 significance level.

Table 7
t-Test Results on the Difference in the Knowledge, Skills, and Attitudes in Emergency and Disaster Response Among Nurses Across Civil Status

Aspect	Civil Status	N	Mean	Mean Difference	Standard Error Difference	df	t-value	Sig	Remarks
Knowledge	Single	32	4.54	-.113	.111	48	-1.014	.315	Not Significant
	Married	18	4.65						
Skills	Single	32	4.42	-.267	.133	48	-2.002	.051	Not Significant
	Married	18	4.69						
Attitudes	Single	32	4.67	-.045	.115	48	-.396	.694	Not Significant
	Married	18	4.71						

This suggests acceptance of the null hypothesis; hence, there is no significant difference in the knowledge and skills of nurses in emergency and disaster response when grouped according to civil status. Single and married nurses share the same knowledge, skills, and attitudes in emergency and disaster response, which implies that factors other than civil status may be more influential in shaping nurses' preparedness and abilities to respond to emergencies. Understanding these factors can help healthcare institutions develop targeted training programs and support systems to enhance emergency response capabilities across all groups of nurses, ultimately improving patient outcomes and overall disaster preparedness.

Table 8 displays the test results of differences in the knowledge, skills, and attitudes in emergency and disaster response among nurses across the highest educational attainment.

Table 8
ANOVA Results on the Difference in the Knowledge, Skills, and Attitudes in Emergency and Disaster Response Among Nurses Across Highest Educational Attainment

Aspect	Source of Variation	Sum of Squares	df	Mean Squares	F-value	Sig	Remarks
Knowledge	Between Groups	.442	2	.221	1.596	.213	Not Significant
	Within Groups	6.504	47	.138			
	Total	6.946	49				
Skills	Between Groups	1.648	2	.824	4.301	.019	Significant
	Within Groups	9.005	47	.192			

	Total	10.654	49				
Attitudes	Between Groups	.375	2	.187	1.265	.292	Not Significant
	Within Groups	6.959	47	.148			
	Total	7.334	49				

The computed F- values, along with knowledge and attitudes, generated significance values higher than the set .05 level of significance, suggestive of acceptance of the null hypothesis. Therefore, there exists no significant difference in the knowledge and attitudes of the nurses when grouped according to educational attainment.

However, a significantly lower value than .05 is evident under the computed F-value corresponding to skills. It means that the highest educational attainment of nurses affects their skills in emergency and disaster response. Table 8 presents the outcomes of the Scheffe test, which aims to pinpoint specific groups exhibiting notable skill-level disparities. Nurses possess skillful expertise in responding effectively to emergencies and managing situations during disasters. Sibandz and Scafide (2018) discovered that registered nurses with a bachelor's degree in nursing (BSN) or higher tend to possess superior skills and demonstrate a more vital application of professional values than nurses with lower academic qualifications or non-academic educational backgrounds. Furthermore, nurses with higher levels of education tend to prioritize professional values as essential components of high-quality nursing care practice.

Table 9 reveals the groups that significantly differ in skills in emergency and disaster response across the highest educational attainment.

Table 9
Scheffe Test Results on the Significant Difference in the Skills in Emergency and Disaster Response among Nurses Across Highest Educational Attainment

Aspect	Compared Groups	Mean Difference	Sig
Skills	w/ Master's Units vs Master's Degree Holder	.798	.020

The significant positive mean difference between nurses who earned Master's units and nurses who are master's degree holders indicates that the former has higher statistical means. It implies that nurses who finished units leading to master's degrees claim to have better skills in emergency and disaster response than those who are already master's degree holders. The study's findings contradict the study of Naser et al. (2018), which found that postgraduate staff were more knowledgeable than graduates. These findings underscore the complexity of assessing skills and knowledge in emergency and disaster response among nursing professionals and highlight the need for continued research to understand better the factors influencing perceived competency levels in this critical area of healthcare.

Table 10 displays the difference in the knowledge, skills, and attitudes in emergency and disaster response among nurses across positions.

Table 10
ANOVA Results on the Difference in the Knowledge, Skills, and Attitudes in Emergency and Disaster Response Among Nurses Across Position

Aspect	Source of Variation	Sum of Squares	Df	Mean Squares	F-value	Sig	Remarks
Knowledge	Between Groups	.398	2	.199	1.427	.250	Not Significant
	Within Groups	6.548	47	.139			
	Total	6.946	49				
Skills	Between Groups	1.766	2	.883	4.669	.014	Significant
	Within Groups	8.888	47	.189			
	Total	10.654	49				
Attitudes	Between Groups	.384	2	.192	1.300	.282	Not Significant
	Within Groups	6.949	47	.148			
	Total	7.334	49				

The computed F-values under knowledge and attitudes provided significance values higher than the set .05 significance level, which implies that no significant difference exists in the nurses' emergency and disaster response when grouped according to the position. On the other hand, nurses' emergency and disaster response skills are significantly different across positions, implying differences in their abilities. Some nurses held supervisory positions that focused more on monitoring the ER nurses. They are also knowledgeable but concentrate on direct patient care. Pavlou (2023) cited the ability to provide clinical supervision as an essential skill for any nursing supervisor. This skill is needed to ensure nurses provide safe and effective patient care. Clinical supervision also allows supervisors to identify areas where nurses may require additional training or support.

Table 11 shows the significant difference in emergency and disaster response skills among nurses across positions. A positive mean difference of .960 exists between staff nurse and supervisor groups.

Table 11
Scheffe Test Results on the Significant Difference in the Skill in Emergency and Disaster Response Among Nurses Across Position

Aspect	Compared Groups	Mean Difference	Sig
Skills	Staff Nurse vs Supervisor	.960	.314

It indicates that the mean values for staff nurses regarding emergency and disaster response skills are significantly higher than those of the supervisor. Staff nurses are more skillful in emergency and disaster response compared to supervisors. Supervisors usually supervise and monitor their ER nurses, not direct patient care. The emergency room (ER) nurses underwent training tailored explicitly to emergency room procedures and acquired proficiency in responding to emergencies and managing disaster situations. According to Team (2024), the most important hard skills for emergency room nurses include essential life support (BLS), advanced cardiac life support (ACLS), triage, and critical care. The ability to multitask is necessary for ER nurses, who often must juggle multiple patients at once, and it can be a challenge, as each patient may have different needs and require different levels of care. Effectively multitasking ensures that all patients receive prompt and necessary care.

Table 12 reveals the test results for differences in nurses' knowledge, skills, and attitudes in emergency and disaster response across monthly family income.

Table 12
ANOVA Results on the Difference in the Knowledge, Skills, and Attitudes in Emergency and Disaster Response Among Nurses Across Monthly Family Income

Aspect	Source of Variation	Sum of Squares	Df	Mean Squares	F-value	Sig	Remarks
Knowledge	Between Groups	.415	2	.208	1.494	.235	Not Significant
	Within Groups	6.531	47	.139			
	Total	6.946	49				
Skills	Between Groups	.821	2	.410	1.962	.152	Not Significant
	Within Groups	9.833	47	.209			
	Total	10.654	49				
Attitudes	Between Groups	.114	2	.057	.371	.692	Not Significant
	Within Groups	7.220	47	.154			
	Total	7.334	49				

The computed F-values, knowledge, skills, and attitudes have provided significance values higher than the set .05 significance level. It implies that the emergency and disaster response of the nurse in these aspects is the same when grouped according

to monthly family income. It revealed that regardless of the compensation received by the respondents, their knowledge, skills, and attitudes in emergency and disaster response. Magsambol (2020) cited that Filipino nurses had been leaving the country for many years after failed attempts to fight for higher wages and better working conditions. Registered nurses hired by hospitals commonly receive an average salary of P9,757 a month. The government's average monthly wage is around P13,500; in the private sector, the average rate is around P10,000.

Table 13 presents the difference in nurses' knowledge, skills, and attitudes in emergency and disaster response across several years in service. Aside from that, ER nurses also work long hours, often in high-stress situations, which can affect their well-being. Despite these challenges, ER nurses attend to their duties daily, providing the best possible care to their patients and ensuring that those in the most critical condition receive the needed attention.

Table 13
ANOVA Results on the Difference in the Knowledge, Skills, and Attitudes in Emergency and Disaster Response Among Nurses Across Number of Years in Service

Aspect	Source of Variation	Sum of Squares	Df	Mean Squares	F-value	Sig	Remarks
Knowledge	Between Groups	.221	3	.074	.503	.682	Not Significant
	Within Groups	6.725	46	.146			
	Total	6.946	49				
Skills	Between Groups	1.189	3	.396	1.927	.138	Not Significant
	Within Groups	9.464	46	.206			
	Total	10.654	49				
Attitudes	Between Groups	.645	3	.215	1.479	.235	Not Significant
	Within Groups	6.689	46	.145			
	Total	7.334	49				

The statistical data indicate no significant difference in nurses' knowledge, skills, and attitude in emergency and disaster response regarding length of service. Nurses who are old and new in the service have comparable knowledge, skills, and attitudes in emergency and disaster response. Before a nurse is assigned to the emergency room, she must have the competencies required in emergency and disaster response. Emergency and disaster care training is essential before a nurse is assigned to the ER. The study by McNeill et al. 2020 on nurses' preparedness during disasters indicates significant areas for improvement in nurses' professional emergency preparedness competence. While length of service may not significantly impact nurses' readiness in emergency and disaster response, ongoing efforts are needed to enhance nurses' preparedness and competence in this critical aspect of healthcare delivery. It includes

comprehensive training programs, regular drills, and the implementation of evidence-based practices to improve emergency response capabilities among nursing professionals.

Table 14 displays the results of the difference in nurses' knowledge, skills, and attitudes in emergency and disaster response across a number of relevant trainings on emergency and disaster for the past five years.

The computed values suggest insignificant results, leading to the acceptance of the null hypothesis. The amount of relevant training the nurses attend is consistent with their knowledge, skills, and attitudes in emergency and disaster response. It implies that the respondents' relevant training did not cause any variation in their knowledge, skills, and attitudes regarding emergency and disaster response. Evidence shows that improved training strengthens disaster preparedness, enhancing the psychological preparedness of nurses during disasters; innovative learning and training strategies, such as high-fidelity modeling, are required to help educate nurses for disasters (Al Thobaity et al., 2017; Horrocks et al., 2019; Said & Chiang, 2020). Other studies have also reported low levels of disaster preparedness (Ahn et al., 2017; Labrague et al., 2018; Uhm et al., 2016). Labrague et al. (2016) reported that 80% of Filipino nurses suggested needing more time to bed to respond to disasters and highlighted the ongoing need for enhanced disaster preparedness training among nurses to ensure they are adequately equipped to respond effectively to emergencies and disasters. While the amount of relevant training attended may not significantly impact nurses' knowledge, skills, and attitudes in emergency and disaster response, continual efforts are required to improve disaster preparedness training and ensure nurses are well-prepared to handle emergencies and disasters in healthcare settings.

Part IV: Pearson-r Correlation Stating the Results on the Significant Relationship Between the Knowledge, Skills, and Attitude Across their Profile Variables

Table 15 presents the relationship between nurses' knowledge, skills, and attitudes in emergency and disaster response and their profile variables. Only knowledge in emergency and
disaster response and a number of relevant trainings have shown a significant relationship with each other.

The significant positive R-value of .294 indicates a direct relationship. The more relevant training the nurses have attended, the more knowledgeable they are about emergency and disaster response. There are no significant relationships between knowledge, skills, and attitudes in emergency and disaster response and the other profile variables, which implies that they do not vary.

Table 15
Relationship Between the Knowledge, Skills, and Attitudes in Emergency and Disaster Response Among Nurses and their Profile Variables

	Knowledge		Skills		Attitude	
Profile Variable	**r-value**	**sig**	**r-value**	**sig**	**r-value**	**sig**
Age	.256	.073	.146	.313	.268	.060
Civil Status	.145	.315	.278	.051	.057	.694
Highest Educational Attainment	.115	.425	-.101	.486	.070	.629
Position	-.034	.812	-.167	.246	-.223	.119
Monthly Family Income	-.094	.516	-.253	.076	-.059	.682
Number of Years in Service	.003	.985	-.025	.862	-.047	.745
Number of Relevant Trainings on Emergency and Disaster	**.294***	.039	.245	.086	.163	.258

***Significant at .05 level**

As cited by Al Thobaity et al. (2017), training is essential to strengthen disaster preparedness, enhancing psychological preparedness among nurses during disasters. Also, according to Balut et al. 2022, training healthcare workers in disaster preparedness has increased their willingness and ability to report to work during emergencies. These findings underscore the importance of ongoing training initiatives to improve disaster preparedness among healthcare workers, including nurses. By providing comprehensive training programs, healthcare institutions can ensure that their staff are well-prepared to respond to emergencies and disasters effectively, ultimately improving patient outcomes and overall healthcare resilience

Proposed Training Program for Emergency Room Nurses in Emergency and Disaster

General Objectives: To further enhance Emergency Room Nurses' knowledge, skills, and attitudes in response to emergency and disaster cases in the Emergency Room.

ASPECT: KNOWLEDGE	
Type of Training	
Advanced Emergency and Disaster Response Training	Capacity Building and Planning for the Unexpected Events Training
Title of Training Program	
"Quantum Care ER Tech: Empowering ER Nurses for High-Tech Emergency and Disaster Response"	"ER Dynamo: Energizing and Powering Emergency Room Nurses for the Unforeseen Challenges"
Objectives	
To familiarize Emergency Room Nurses with the use of high-technology equipment. To enhance their proficiency in emergency and disaster response.	To Provide training to Emergency Room Nurses on effective triage and prioritization strategies, enabling them to assist patients with life-threatening and trauma cases promptly and efficiently. To familiarize Emergency Room Nurses with advanced medical equipment used in emergency and disaster response.
Schedule	
Once a year Every January	Once a year Every April

Expected Output	
Emergency Room Nurses will demonstrate increased proficiency in operating high-tech equipment during emergencies and disasters.	Emergency Room Nurses will demonstrate efficient and accurate triage, ensuring critical patients receive timely care.

Improved patient care outcomes through the efficient use of advanced technology.	Emergency Room Nurses will confidently operate high-tech devices, optimizing patient care and outcomes.

ASPECT: SKILLS	
Type of Training	
Training on Hospital Referral System	Reorientation on the scope of responsibilities and policies of the Nursing Service
Title of Training Program	
“Referral Roadmap: Gabay para sa mga Nars sa ER”	“The Nursing Service Voyage: Pagbabalik-tanaw sa Ating mga Responsibilidad at Patakaran”
Objectives	
To understand the fundamentals and importance of an efficient hospital referral system, including its purpose, components, and workflow.	To review Emergency Room Nurses' responsibilities and update existing policies to ensure alignment with best practices and regulatory standards. To encourage continuous professional development among Emergency Room Nurses, fostering a culture of lifelong learning.
Schedule	
Once a year Every June	Once a year Every August
Expected Output	
Enhanced participants' grasp of hospital referral systems' purpose, components, and workflow.	Emergency Room Nurses will be more likely to comply with hospital rules and regulations, which will improve patient care, safety, and the prevention of errors in the Emergency Room.

Increased awareness of the importance of effective hospital referral processes in optimizing patient care and outcomes.	

ASPECT: ATTITUDE	
Type of Training	
The Department of Health (DOH) - Attendance-based training	Stress Management seminar for nurses.
Title of Training Program	
Based on the Department of Health (DOH)-sponsored training program.	"Thriving In Turbulence: Emergency Nurses Stress Solutions
Objectives	
To foster awareness among healthcare professionals regarding the latest updates and trends in the healthcare system.	To prepare Emergency Room Nurses with effective stress reduction techniques. To minimize challenges encountered in the Emergency Room.
Schedule	
The training sessions will be scheduled according to the Department of Health (DOH) calendar. Participants will receive notifications regarding the dates and times of each session.	Once a year Every October
Expected Output	
Participants will have a deeper understanding of recent developments in healthcare policies, protocols, and best practices. They will be better equipped to adapt to changes, implement evidence-based approaches, and provide high-quality care to patients. Participants will gain insights into emerging trends that can positively impact their professional practice.	To prepare Emergency Room Nurses with effective stress reduction techniques and minimize challenges encountered in the Emergency Room.

The nexus of knowledge, skills, and attitudes plays an essential role in emergency and disaster response among nurses. Therefore, efforts should be made to strengthen this nexus through continuous training, simulation exercises, a supportive work environment, personal development, and effective policymaking.

Conclusions

Based on the study's findings, the following are now concluded.

The nurse respondents were young adults, singles, and holders of bachelor's degrees; most were staff nurses earning an average monthly income, having been in the service for long years, and having inadequate relevant training in emergency and disaster nursing.

The respondents were knowledgeable about emergency and disaster response and skilled in attending to patients in the ER setting. They have adopted and practiced the appropriate attitudes necessary for managing emergency and disaster responses, recognizing the crucial importance of this skill. Moreover, their appropriate attitudes toward high-pressure situations are essential for effective and compassionate care.

These findings underscore the importance of continuous training and education to maintain high standards of emergency nursing care. It also points to the potential need for further development in certain areas, such as disaster preparedness training, to ensure that nurses are fully equipped to handle various emergency scenarios.

Nurses who finished units leading to a master's degree claim to have better skills in emergency and disaster response than those who are already master's degree holders. The skills of the nurses in emergency and disaster response are significantly different across positions. Staff nurses are more skilled and typically more involved in direct patient care and may, therefore, have more opportunities to apply and hone their emergency response skills than nurse supervisors.

Based on the findings, a comprehensive training program for emergency room (ER) nurses could be developed to enhance and improve their knowledge, skills, and attitudes in emergency and disaster response. This program would include focused education on emergency management principles, practical workshops for skills development such as triage assessment and rapid decision-making, simulated emergency scenarios to apply learned techniques in realistic settings, communication training to ensure effective coordination during crises, psychological support sessions to manage stress and trauma, discussions on ethical considerations in emergency care, continuous educational opportunities to remain informed about current best practices. , and regular evaluations to assess program effectiveness and gather feedback for

improvement.

The more relevant training the nurses have attended, the more knowledgeable they are in emergency and disaster response.

The proposed training program is prepared to enhance further ER nurses' knowledge, skills, and attitudes.

Recommendations

Based on the conclusions formulated, the following are now recommended:

The ER nurses must pursue more emergency and disaster response training, enhancing their preparedness and capabilities. Therefore, investing in additional training specific to emergency and disaster response is crucial for ensuring that nurses are well-prepared to handle various critical scenarios in the emergency room. Pursuing a graduate program in nursing can provide a deeper theoretical understanding and advanced practical skills, which are invaluable in emergencies.

Additionally, these programs provide nurses with opportunities to specialize in emergency and critical care, thereby arming them with specialized knowledge and expertise essential for navigating the distinctive challenges found in emergency room environments. Enhancing their experiences in handling emergency and disaster cases will further solidify their competencies and confidence in providing critical care. Furthermore, gaining more experience handling emergency and disaster cases is invaluable for emergency room nurses. Practical experience enables nurses to apply theoretical knowledge in real-life situations, fostering the development of critical thinking skills and bolstering confidence in their capacity to deliver exceptional care, even amidst high-pressure circumstances.

They must enhance their knowledge, skills, and attitudes by continuously updating themselves on new care trends for emergency and disaster patients. Continuous updating on new care trends for emergencies and disasters is essential for emergency room nurses to maintain competence, adaptability, and excellence in their practice. It ensures that nurses have the necessary skills and resources to meet patients' changing demands and provide excellent care during emergencies.

Nurses on the supervisory level must update themselves on emergency and disaster response. Supervisors should be on par with their staff nurses. This alignment in skills and knowledge between supervisors and staff nurses is essential for a cohesive and responsive team, especially in high-stress situations like emergencies and disasters. Furthermore, aligning supervisors' skills and knowledge with staff nurses fosters mutual respect, collaboration, and trust within the nursing team. It promotes a culture of teamwork and shared responsibility, where every member feels appreciated and empowered to contribute to the team's success. By aligning their skills and knowledge

with those of staff nurses, supervisors contribute to a culture of preparedness, collaboration, and excellence in emergency care delivery.

Conduct a hospital training program by inviting experts in emergencies and disasters. Inviting experts in the field of emergencies and disasters is an excellent initiative. Such training programs can significantly enhance the skills and knowledge of emergency room nurses, leading to improved patient care outcomes and potentially saving more lives during critical situations.

Hospitals can adapt training programs to improve patient care outcomes, save more lives, and enhance the skills of emergency room nurses. By staying current with the latest practices and technologies in emergency care, emergency room nurses can be better prepared to face the challenges of their demanding roles.

Compliance with Ethical Standards

The researcher ensured that ethical precautions and procedures were followed throughout the study. In the whole process of this study, the researcher considered ethical precautions to follow:

Informed Consent: Before initiating the study, the researcher ensured that all participants provided informed consent. This included providing detailed information about the purpose of the study, the procedures involved, potential risks and benefits, confidentiality measures, and the voluntary nature of participation.

Confidentiality: The researcher implemented measures to safeguard the confidentiality of participants' information. These measures included anonymizing data, assigning participant codes, securely storing data, and controlling access to identifiable information. By doing so, the privacy of participants was preserved throughout the study.

Voluntary Participation: Participants were assured that their participation in the study was entirely voluntary, and they maintained the right to withdraw at any juncture without encountering any negative repercussions. Notably, there was a commitment to refrain from coercion or pressure to participate.

Avoidance of Harm: The researcher took steps to minimize the risk of harm to participants, both physical and psychological. This includes conducting the study to respect participants' dignity, privacy, and emotional well-being.

Disclosure of Conflicts of Interest: The researcher disclosed any potential conflicts of interest that could affect the integrity or impartiality of the study.

Transparency: The researcher provided clear and transparent communication about the study's purpose, methods, findings, and implications, both to participants and to the broader research community

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ASSESSMENT OF ACCEPTABILITY AND SHELF LIFE OF COOKIES ENRICHED WITH GROUND, CANDIED, AND DEHYDRATED BAMBOO SHOOTS

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ABSTRACT

This study was conducted primarily to formulate cookies enriched with bamboo shoots and assess their acceptability among panelists. Evaluation criteria are color, aroma, texture, flavor, and overall acceptability of cookies enriched with ground, candied, and dehydrated bamboo shoots. Furthermore, the study investigated the shelf life of these cookies. The cookie treatments were analyzed through sensory evaluation involving 51 panelists. Results indicated that cookies containing candied bamboo shoots were most preferred in terms of color, flavor, and overall acceptability, while the control sample exhibited superior aroma. The treatment comprising cookies enriched with ground bamboo shoots, was favored for its texture. Moreover, cookies enriched with candied bamboo shoots demonstrated the longest shelf life compared to other treatments.

Keywords: *Bamboo Shoots, Cookies, Product Development, Sensory Evaluation, Product Acceptability, Shelf Life*

INTRODUCTION

To ensure the health and nutrition of students participating in the School-Based Feeding Program (SBFP), it is imperative to offer snacks that adhere to the guidelines stipulated in Department Order No. 34, Series of 2017, emphasizing the significance of providing wholesome foods. This directive is in line with the principles outlined in Department Order No. 13, Series of 2017, which advocates for healthy dietary choices within educational institutions and DepEd offices.

While commercial cookies may be convenient, they often pose health disadvantages due to their high sugar, fat, and calorie content (Johnson et al., 2016).

Additionally, unhealthy cookies typically lack essential nutrients and may contribute to adverse health effects such as weight gain, elevated blood sugar levels, and increased risk of chronic diseases like diabetes and cardiovascular conditions (Brown et al., 2019). Furthermore, the consumption of commercial and unhealthy cookies can lead to a range of health issues beyond those associated with excessive sugar and fat intake.

These cookies often contain refined flours and artificial additives, which offer little nutritional value and may even contribute to inflammation and impaired immune function (de Punder & Pruimboom, 2015). The high glycemic index of such cookies can also result in rapid spikes and subsequent crashes in blood sugar levels, leading to feelings of fatigue and hunger shortly after consumption (Ludwig, 2019). Moreover, the overconsumption of processed snacks like these has been linked to an increased risk of obesity and metabolic syndrome, further underscoring the importance of offering healthier alternatives within the SBFP (Malik et al., 2013). By incorporating bamboo shoots into snacks, not only can these detrimental health effects be mitigated, but students can also benefit from the nutritional value and versatility of this locally available ingredient.

Abundant in Mankayan, Benguet, bamboo shoots are versatile ingredients that are underexplored in baking despite their culinary diversity, ranging from stir-fries to salads (Sohail et al., 2023). Research highlights the nutritional benefits of bamboo shoots, including high dietary fiber content, low calorie and fat content, and a wealth of vitamins (C, A, B6), minerals (potassium, magnesium), and antioxidants (Xu et al., 2018). The significant fiber content in bamboo shoots promotes gastrointestinal health by supporting regular bowel movements and fostering a favorable gut microbiome environment, potentially alleviating digestive issues such as constipation and hemorrhoids (Chen et al., 2012).

Given these considerations, the researcher would like to explore the acceptability of cookies enriched with bamboo shoots as a viable snack option for the School-Based Feeding Program. This innovative approach not only aligns with the SBFP's objective of offering nutritious snacks but also harnesses local resources to enhance the overall health and well-being of students.

Objectives of the Study

The general objective of the study is to develop cookies enriched with bamboo shoots using creaming method. Specifically, it aims to:

1. determine the consumer’s acceptability of cookies enriched with ground, candied, and dehydrated bamboo shoots in terms of color, aroma, texture, flavor and overall acceptability; and

2. determine the shelf life of cookies enriched with ground, candied, and dehydrated bamboo shoots.

METHODOLOGY

This section discusses the locale of the study, research design, respondents, research instruments, materials, and methods used in conducting the study.

Locale of the Study

The study was conducted at Lepanto National High School, Paco, Mankayan, Benguet. Various formulations were prepared at the researcher's residence, and sensory evaluations were conducted with some learners of the said school.

Research Design

The study employed a quantitative research design. Sensory Evaluation Questionnaire was used to determine acceptability of the cookie treatments.

Research Respondents

The panelists were composed of 51 individuals of both sexes from Lepanto National High School. These group of panelists are considered as consumer-type panelists.

Research Instrument

To determine the level of acceptability of the panelists in terms of color, aroma, texture, flavor, and overall acceptability of the samples, nine-point hedonic scale was used.

Materials

The bamboo shoots used were gathered within Paco, Mankayan. The utensils and/or equipment used are oven, mixing bowl, electric mixer, rubber scraper, measuring cups, measuring spoons, cookie cutter, baking pan, weighing scale, kitchen knife, dehydrator, food processor, non-stick pan, and wooden spoon. The ingredients needed in preparing the cookies are all-purpose flour, white sugar, brown sugar, unsalted butter, egg, vanilla extract, baking soda, salt, and bamboo shoots.

In conducting the sensory evaluation, plates, plastic spoons, and cookie samples were used. Appropriate scorecards were also provided for the panelists to record their judgements on the given samples. Further, bottles of water were available for the panelists to cleanse their palate before and after tasting each sample.

Table 1 presents the ingredients in making the control sample and treatments of cookies enriched with bamboo shoots. It also indicates the measurements needed for every sample.

Table 1. Measurement of ingredients in preparing cookies enriched with bamboo shoots

INGREDIENTS	TREATMENTS			
	327	**273**	**732**	**372**
	Control	Ground	Candied	Dehydrated
All-purpose flour	313 g	313 g	313 g	313 g
butter	125 g	125 g	125 g	125 g
white sugar	63 g	63 g	63 g	63 g
brown sugar	125 g	125 g	125 g	125 g
egg	57 g	57 g	57 g	57 g
vanilla extract	6 g	6 g	6 g	6 g
baking soda	3 g	3 g	3 g	3 g
salt	3 g	3 g	3 g	3 g
bamboo shoots (ground)	-	225g	-	-
bamboo shoots (candied)	-	-	225g	-
bamboo shoots (dehydrated)	-	-	-	225g

Methods

This section discusses the method used in preparing the control sample and the different treatments of cookies enriched with bamboo shoots.

A. Preparation of Bamboo Shoots

The bamboo shoots as enrichment were prepared by peeling the outside leafy covering, washing, cutting into strips, boiling, and processing. The procedures applied in processing the bamboo shoots are shown in Table 2.

Table 2. Procedures of preparing different pre-treatments of bamboo shoots

Bamboo Shoots (Ground)	**Bamboo Shoots (Candied)**	**Bamboo Shoots (Dehydrated)**
1. Grind bamboo shoots using a food processor (SUS 304).	1. Boil 1/2 cup water using non-stick pan. Add 3 cups of brown sugar, dissolve and let it caramelize.	1. Arrange the bamboo shoot strips on the dehydrator trays (Nontaus Fruit Dehydrator, JZE-R2 (A)), and dehydrate it at 700 C for 5 hours.
	2. Add 1kg bamboo shoot strips. Stir and let the water evaporate until crystalized sugar will coat the bamboo shoot strips.	

B. Preparation of Cookies Enriched with Bamboo Shoots

The creaming method was adopted for the control and all treatments of the cookies. The first procedure is to preheat the oven at 350^0F (La Germania, SL155 40WT was used). Cover baking sheet (13”x 16”) with parchment paper. Measure all ingredients using a digital weighing scale (Electronic Kitchen Scale, SF-400). In a mixing bowl (9” Ø, 6”h), combine all-purpose flour (313g), salt (3g), and baking soda (3g). Mix well and set aside. In a separate bowl, put the butter (125g) then cream it using electric mixer (Imarflex, IMX-270B, SN: 4456 used). Gradually add sugar and continue beating until texture becomes fluffy. Add vanilla extract (6g) and egg (57g) then continue mixing for 2 minutes. Gradually add all-purpose flour, salt, and baking soda mixture and beat until all the ingredients are well-mixed. Add bamboo shoots, fold until bamboo shoots are well incorporated.

The bamboo shoot enrichment varies, no bamboo shoot was added for the control sample; and 225g ground bamboo shoots, 225g candied bamboo shoots, and 225g dehydrated bamboo shoots for treatments 273, 732, and 372 respectively. Scoop and drop the mixture on the baking sheet covered with parchment paper. Bake for 10-12 minutes. After baking, the cookies will be cooled and packed in polypropylene plain low-density polyethylene bag.

C. Shelf Life Analysis

The researcher conducted basic shelf-life analysis on the cookies through microbiological analysis, particularly focusing on the presence of molds over time. This method typically entails packaging the cookies in polyethylene bags and storing them at room temperature. Mold growth on cookies can be a significant indicator of spoilage and can affect the safety and quality of the product. By monitoring mold growth over a period, the researcher determined the shelf-life of the cookies and assessed their suitability for consumption.

RESULTS AND DISCUSSION

This section presents the discussion of the data based on the objectives of the study. This includes the level of acceptability of the panelists and the shelf life of cookies enriched with ground, candied, and dehydrated bamboo shoots.

Level of Acceptability of Cookies Enriched with Bamboo Shoots

A. Color

Table 3 presents frequency distribution and proportions of the level of acceptability of cookies enriched with different forms of bamboo shoots in terms of color. Each treatment represents a unique variation in the processing of bamboo shoots incorporated into the cookie recipes, namely ground bamboo shoots, candied bamboo shoots, and

dehydrated bamboo shoots. The data reveals varying levels of acceptability among participants for each treatment, indicating distinct preferences regarding the color of the cookies.

Table 3. Frequency distribution and proportions of the level of acceptability of the bamboo shoot-enriched cookies in terms of color

Descriptive Equivalent	Treatment 327 (Control)		Treatment 273 (Ground)		Treatment 732 (Candied)		Treatment 372 (Dehydrated)	
	f	Prop	f	Prop	f	Prop	f	Prop
Dislike extremely	0	0.00	0	0.00	0	0.00	0	0.00
Dislike very much	0	0.00	0	0.00	0	0.00	0	0.00
Dislike moderately	0	0.00	0	0.00	0	0.00	0	0.00
Dislike slightly	0	0.00	2	3.92	0	0.00	0	0.00
Neither like nor dislike	0	0.00	4	7.84	1	1.96	0	0.00
Like slightly	1	1.96	0	0.00	6	11.76	4	7.84
Like moderately	8	15.69	12	23.53	8	15.69	9	17.65
Like very much	22	43.14	17	33.33	13	25.49	16	31.37
Like extremely	20	39.22	16	31.37	23	45.10	22	43.14

Legend: Prop=Proportion

It was noted that for all treatments, there were no recorded instances of extreme dislike, suggesting a general level of acceptability. This indicates that incorporating bamboo shoots into cookies did not result in any overt aversion based on color alone.

Treatment 273, involving cookies enriched with ground bamboo shoots, showed a relatively lower preference compared to other treatments, with only 31.37% of panelists expressing extreme liking. This finding could be attributed to the visual appearance of the cookies, which may have been altered by the presence of ground bamboo shoots. Previous research suggests that visual appearance significantly influences food acceptability and consumer preferences (Grunert, 2002). Cookies with visible particulates might evoke perceptions of non-conventional ingredients, potentially impacting consumer preferences.

In contrast, Treatment 732, which featured cookies enriched with candied bamboo shoots, exhibited a more favorable response, with 45.10% of participants expressing extreme liking. The caramelization of bamboo shoots through the candying process may have contributed to the appealing color and flavor profile of the cookies. Research indicates that the addition of caramelized ingredients can enhance the sensory attributes and overall acceptability of food products (Peng et al., 2016).

Treatment 372, involving cookies enriched with dehydrated bamboo shoots, also demonstrated a high level of acceptability, with 43.14% of participants expressing extreme liking. The dehydrated form of bamboo shoots likely preserved their natural color

and texture, resulting in cookies that visually resembled traditional varieties. Studies have shown that the retention of natural colors in food products positively influences consumer perception and acceptance (Gibson, 2003).

Overall, the findings suggest that the method of processing bamboo shoots significantly impacts the acceptability of cookies in terms of color. While ground bamboo shoots may elicit a relatively lower preference due to their visual presence, candied and dehydrated bamboo shoots offer more visually appealing alternatives.

B. Aroma

As shown in Table 4, all treatments received positive responses in terms of aroma acceptability. Notably, the control sample garnered the highest percentage of respondents who liked the aroma extremely (49.02%), followed closely by Treatment 372 (dehydrated bamboo shoots) 43.14%, Treatment 732 (candied bamboo shoots) 41.18%, and treatment 273 (ground bamboo shoots) 35.29%.

This positive reception aligns with existing studies on the sensory properties of bamboo shoots. For instance, a study by Li et al. (2017) investigated the aroma profiles of different bamboo shoot varieties and found them to contain compounds contributing to desirable fragrances, such as 3-methylbutanal and 2,3-butanedione, which impart buttery and creamy notes. These compounds likely contribute to the favorable aroma perception observed in the bamboo shoot-enriched cookies.

Table 4. Frequency distribution and proportions of the level of acceptability of the bamboo shoot-enriched cookies in terms of aroma

Descriptive Equivalent	**Treatment 327**		**Treatment 273**		**Treatment 732**		**Treatment 372**	
	(Control)		(Ground)		(Candied)		(Dehydrated)	
	f	Prop	f	Prop	f	Prop	f	Prop
Dislike extremely	0	0.00	0	0.00	0	0.00	0	0.00
Dislike very much	0	0.00	0	0.00	0	0.00	0	0.00
Dislike moderately	0	0.00	0	0.00	0	0.00	0	0.00
Dislike slightly	0	0.00	2	3.92	0	0.00	0	0.00
Neither like nor dislike	0	0.00	4	7.84	2	3.92	0	0.00
Like slightly	3	5.88	0	0.00	7	13.73	5	9.80
Like moderately	6	11.76	12	23.53	8	15.69	13	25.49
Like very much	17	33.33	15	29.41	13	25.49	11	21.57
Like extremely	25	49.02	18	35.29	21	41.18	22	43.14

Legend: Prop=Proportion

C. Texture

As presented in Table 5, Treatment 273, involving cookies enriched with ground bamboo shoots, showed a shift in preference towards the highest level of acceptability, with 41.18% of panelists rating the texture as "Like extremely". This suggests that the addition of ground bamboo shoots positively influenced the texture of the cookies, making them even preferable to a significant portion of participants compared to the control sample.

Table 5. Frequency distribution and proportions of the level of acceptability of the bamboo shoot-enriched cookies in terms of texture

Descriptive Equivalent	**Treatment 327** (Control)		**Treatment 273** (Ground)		**Treatment 732** (Candied)		**Treatment 372** (Dehydrated)	
	f	Prop	f	Prop	f	Prop	f	Prop
Dislike extremely	0	0.00	0	0.00	0	0.00	0	0.00
Dislike very much	0	0.00	0	0.00	0	0.00	0	0.00
Dislike moderately	0	0.00	0	0.00	0	0.00	0	0.00
Dislike slightly	0	0.00	0	0.00	0	0.00	0	0.00
Neither like nor dislike	1	1.96	3	5.88	2	3.92	1	1.96
Like slightly	3	5.88	1	1.96	7	13.73	5	9.80
Like moderately	16	31.37	10	19.61	8	15.69	9	17.65
Like very much	12	23.53	16	31.37	14	27.45	17	33.33
Like extremely	19	37.25	21	41.18	20	39.22	19	37.25

Legend: Prop=Proportion

Treatment 732, which involved cookies enriched with candied bamboo shoots, also exhibited a favorable response from panelists regarding texture. 39.22% of panelists rated the texture of these samples as "Like extremely". Lastly, 37.25% of the panelists rated the texture of both the control sample and Treatment 372 as "Like extremely".

The ratings indicate a high level of acceptability for the texture of the sample cookies among the panelists. These findings align with previous research suggesting that the incorporation of unconventional ingredients, such as bamboo shoots, can positively impact the texture of food products. For example, a study by Wang et al. (2019) investigated the utilization of bamboo shoots in bakery products and found that the addition of bamboo shoots contributed to improved texture attributes, including tenderness and moisture retention.

D. Flavor

As shown in Table 6, as to the flavor, Treatment 732 involving cookies enriched with candied bamboo shoots has the highest rating of acceptability as 58.82% of the panelists rated it as like extremely. This result aligns with studies on the impact of

sweetness on consumer preference. Research by Spence and Piqueras-Fiszman (2014) highlights that sweetness can enhance liking and acceptance of food products. The addition of candied bamboo shoots likely contributed to a pleasant sweetness, thus increasing acceptability in terms of flavor.

This is followed by Treatment 372 with a like extremely rating of 49.02%. In addition, 45.10% and 31.37% of the panelists extremely like the control sample and Treatment 273 respectively.

Table 6. Frequency distribution and proportions of the level of acceptability of the bamboo shoot-enriched cookies in terms of flavor

Descriptive Equivalent	**Treatment 327** (Control)		**Treatment 273** (Ground)		**Treatment 732** (Candied)		**Treatment 372** (Dehydrated)	
	f	Prop	f	Prop	f	Prop	f	Prop
Dislike extremely	0	0.00	0	0.00	0	0.00	0	0.00
Dislike very much	0	0.00	0	0.00	0	0.00	0	0.00
Dislike moderately	0	0.00	3	5.88	0	0.00	0	0.00
Dislike slightly	0	0.00	2	3.92	0	0.00	0	0.00
Neither like nor dislike	4	7.84	4	7.84	0	0.00	1	1.96
Like slightly	2	3.92	5	9.80	3	5.88	5	9.80
Like moderately	8	15.69	11	21.57	5	9.80	9	17.65
Like very much	14	27.45	10	19.61	13	25.49	11	21.57
Like extremely	23	45.10	16	31.37	30	58.82	25	49.02

Legend: Prop=Proportion

The absence of strong dislike responses across all treatments indicates that the addition of bamboo shoots did not negatively affect the acceptability of the cookies.

E. Overall Acceptability

As shown in Table 7, the most acceptable sample is Treatment 732, cookies enriched with candied bamboo shoots where 47.06% of panelists extremely like it. The sweet and subtly flavored candied bamboo shoots likely contributed to the favorable reception, appealing to panelists' palates.

Table 7. Frequency distribution and proportions of the level of acceptability of the bamboo shoot-enriched cookies in terms of overall acceptability

Descriptive Equivalent	**Treatment 327** (Control)		**Treatment 273** (Ground)		**Treatment 732** (Candied)		**Treatment 372** (Dehydrated)	
	f	Prop	f	Prop	f	Prop	f	Prop
Dislike extremely	0	0.00	0	0.00	0	0.00	0	0.00

Dislike very much	0	0.00	0	0.00	0	0.00	0	0.00
Dislike moderately	0	0.00	3	5.88	0	0.00	0	0.00
Dislike slightly	0	0.00	0	0.00	0	0.00	0	0.00
Neither like nor dislike	1	1.96	0	0.00	0	0.00	0	0.00
Like slightly	2	3.92	3	5.88	5	9.80	1	1.96
Like moderately	9	17.65	12	23.53	9	17.65	12	23.53
Like very much	19	37.25	16	31.37	13	25.49	17	33.33
Like extremely	20	39.22	17	33.33	24	47.06	21	41.18

Legend: Prop=Proportion

Previous studies on the sensory properties of candied fruits can provide insights into the positive reception of Treatment 2. Research by Aguilar-Sanchez et al. (2019) found that candied fruits, with their concentrated sweetness and unique texture, were well-liked by consumers, indicating the potential for similar acceptability trends with candied bamboo shoots.

Shelf Life Analysis

Understanding the impact of bamboo shoots on the shelf life of cookies, particularly regarding mold formation, is crucial for ensuring food safety and quality. The cookies samples were sealed in polyethylene bags and stored at room temperature and observed for 7 days for the appearance of molds.

As shown in Table 8, molds appeared on the sixth day on the control sample where no bamboo shoots were added. This serves as the baseline for comparison. Treatment 273, which involved cookies enriched with ground bamboo shoots, showed an accelerated onset of mold growth, appearing on the fifth day. Conversely, Treatment 732, utilizing candied bamboo shoots, exhibited a delayed onset, with molds appearing on the seventh day. Treatment 372, incorporating dehydrated bamboo shoots, displayed mold growth on the sixth day, consistent with the control group.

Table 8. Daily mold observation of cookie samples

Cookie Samples	Daily Observations						
	Day 1	**Day 2**	**Day 3**	**Day 4**	**Day 5**	**Day 6**	**Day 7**
Treatment 327 (Control Sample)	No molds	No molds	No molds	No molds	No molds	w/ molds	w/ molds
Treatment 273 (Enriched with Ground Bamboo Shoots)	No molds	No molds	No molds	No molds	w/ molds	w/ molds	w/ molds
Treatment 732 (Enriched with Candied Bamboo Shoots)	No molds	No molds	No molds	No molds	No molds	No molds	w/ molds

Treatment 372 (Enriched with Dehydrated Bamboo Shoots)	No molds	No molds	No molds	No molds	No molds	w/ molds	w/ molds

These observations suggest that the form in which bamboo shoots are incorporated into the cookies influences their susceptibility to mold growth. Ground bamboo shoots, likely due to increased surface area and exposure to moisture, may provide a favorable environment for mold proliferation, thus shortening the shelf-life. On the other hand, candied bamboo shoots, which undergo a preservation process involving sugar, may exhibit mold inhibition properties, contributing to a prolonged shelf-life. Dehydrated bamboo shoots, while retaining some moisture, may have characteristics that do not significantly impact mold growth compared to the control.

Previous studies have highlighted the importance of moisture control in inhibiting mold growth in food products. Tapia et al. (2020) emphasized that high moisture levels provide an ideal environment for mold growth, leading to spoilage and potential health hazards. The presence of added fruits and vegetables introduces additional sources of moisture thereby accelerating the mold growth in the products.

Conclusions

The following conclusions were derived from the results of the study:

1. According to the findings, Treatment 732, cookies enriched with candied bamboo shoots, were deemed the most acceptable in terms of color, flavor, and overall acceptability. In addition, the control sample was found to be the most acceptable in terms of aroma. Treatment 273, featuring cookies enriched with ground bamboo shoots, emerged as the top choice for texture. A small percentage of 3.92% expressed slight dislike for the samples in terms of color, aroma, and flavor. Additionally, 5.88% moderately disliked the samples in terms of flavor and overall acceptability. Thus, cookies enhanced with bamboo shoots are regarded as highly acceptable.

2. Cookies enriched with ground bamboo shoots showed accelerated mold growth, with molds appearing on day 5, whereas those enriched with candied bamboo shoots displayed a delayed onset, suggesting potential mold inhibition properties, as molds appeared on day 7. Dehydrated bamboo shoot cookies exhibited mold growth like the control on day 6. Therefore, cookies enriched with candied bamboo shoots have the longest shelf life.

Recommendations

Based on the findings and conclusions of the study, the following are recommended:

1. Given the favorable acceptability of cookies enriched with bamboo shoots among the panelists, it is recommended that the developed cookies be sold in schools and

prepared for beneficiaries of school-based feeding programs. Additionally, conducting sensory evaluations with a wider audience could provide further insights into the acceptability of this product.

2. To potentially increase the shelf life of bamboo shoot-enriched cookies, other storing techniques and packaging materials, such as vacuum-sealed packaging or packaging with moisture-absorbing properties that provide a barrier against moisture and air, may be explored.

Compliance with Ethical Standards

This study, entitled *Assessment of Acceptability and Shelf Life of Cookies Enriched with Ground, Candied, and Dehydrated Bamboo Shoots*, adheres to the highest ethical standards throughout its execution.

Informed consent was obtained from all panelists involved. Panelists were provided with detailed information about the study objectives, procedures, potential risks, and benefits, and they were given the opportunity to ask questions before providing their consent. Panelists were assured of their absolute freedom to withdraw from the study at any stage without facing any repercussions or consequences.

The privacy and confidentiality of all panelists were strictly maintained throughout the study. Any personal or sensitive information collected from participants was kept confidential and used only for research purposes.

Furthermore, this research was conducted in accordance with relevant guidelines and regulations governing research involving human subjects, as outlined by national and international regulatory bodies.

Overall, this study upholds the principles of integrity, respect for participants' rights, and responsible conduct of research, ensuring that ethical standards are rigorously upheld at all stages of the study.

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BEHAVIORAL TENDENCIES OF INTERMEDIATE PUPILS AT INDANAN SOUTH DISTRICT ELEMENTARY SCHOOL AT MINISTRY OF BASIC, HIGHER AND TECHNICAL EDUCATION IN SULU: TEACHER'S PERSPECTIVE

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ABSTRACT

This study is descriptive-qualitative research determining the extent of behavioral tendencies of intermediate pupils at Indanan south district elementary school MBHTE-Sulu: Teachers' perspective. Employing weighted mean, standard deviation, t-test for independent samples, one-way ANOVA, and Pearson's r test of correlation. The following are the findings of this study: 1) Out of 100 teacher-respondents, great majority are within 31 years old and above of age brackets, are female and most are married and with bachelor's degree. 2) Sub-categories subsumed under the extent of Behavioral Tendencies of Intermediate Pupils at Indanan South District elementary school as perceived by the teachers in the context of Activity Level, Emotional control and aggression and destructiveness is all rated as "less extent" with total weighted mean score of 3.12, 2.73, 2.01 with standard deviation of 1.04310, 1.03469, 1.352 respectively by the teacher-respondents at Indanan South District Elementary School involved in this study. 3) Generally, there is no significant difference in the extent of Behavioral Tendencies of Intermediate Pupils at Indanan South District elementary school as perceived by teachers when data are grouped according to their educational attainment and civil status. However, teacher-respondents perceived differently on the extent of Behavioral Tendencies of Intermediate Pupils at Indanan South District elementary school when data are grouped according to their age and gender. 4) Generally the sub-categories subsumed under the extent of Behavioral Tendencies of Intermediate Pupils at Indanan South District elementary school as perceived by the teachers are highly correlated. Moreso, this study recommends the following: 1) DepEd administrators should ensure access to support services such as counseling, special education, and health and nutrition programs to address the diverse needs of intermediate pupils at Indanan South District Elementary School and promote their holistic development. 2) Teachers at the Indanan South district Elementary School may prioritize their own professional development and growth to stay abreast of current research, best practices, and

emerging trends in education. Engaging in ongoing training, workshops, and professional learning sessions focusing on behavior management strategies. 3) Educators are encouraged to adopt a holistic approach to behavior assessment, considering multiple dimensions such as social, emotional, and academic behaviors. Implement frameworks or tools that facilitate comprehensive behavior assessment, allowing educators to capture the interconnected nature of student behavior more accurately, and, 4) More so, Future researchers in the field of Education are encouraged to conduct study like this one to further assess the behavioral tendency of intermediate pupils and how will this impact their academic performance, socio-emotional development, and overall well-being.

Keywords: *Behavioral Tendencies, Teachers' Perspective, MBHTE, Descriptive Research.*

INTRODUCTION

Seeing students' inclinations in terms of behavior is crucial for teachers to do since teaching is more than just directing students' learning and passing along information. Rather, as a process, it ensures students' emotional, spiritual, cognitive, and social well-being in addition to their behavior's consistency. It also focuses on addressing potential behavioral tendencies in students that could have a negative effect on their education and interpersonal interactions. Furthermore, considering our combined experiences as parents and educators, we believe that teachers should look into behavioral issues with their pupils because the longer they remain untreated, the worse they get.

Two related clusters of problematic behaviors were found by Algozzine (2017), and they are extremely pertinent to the educational environment. One grouping, known as the social defiance cluster, included lazy and uncooperative behavior in addition to violent and destructive disobedient actions. On the other hand, motor behavior was perceived considerably differently, as it was thought to be determined naturally. The cluster of social immaturity encompassed depressive and nervous behaviors, inactivity, as well as clumsiness and nonsensical speaking.

The "striving" for objects that hinder or enable goal- or need-directed behavior is the fundamental cause of the tendency (see, for example, Frijda, 1986, 2010; Cacioppo et al., 2000; Kreibig et al., 2010). There has been an attempt to reconcile the discrete action program and motivation-grounded viewpoints on action inclination and emotional action. Christie and Friedman (2004) found that the "basic" emotions—anger, fear, sadness, amusement, contentment, and disgust—mapped onto the continuous dimensions 4. According to Ekman (2003) and Levenson et al. (2011), the fundamental emotions are: fear, happiness, disgust, rage, sadness, and surprise.

Other social and emotional difficulties, including as sadness, suicide, and impairments, have also been linked to behavioral problems among students [1–2]. Additionally, these issues have a severe effect on kids' social and psychological growth, which could have an adverse effect on their capacity for constructive interpersonal connection as well as their learning and academic success. In this way, behavioral

problems may prevent students from learning in the classroom during their formative years, which may prevent them from acquiring the skills necessary to succeed as adults and professionals in a distant setting in the future. Our experience has shown that in order to create learning environments that support both general and tailored learning experiences, a methodical planning, implementation, and monitoring approach is needed, one that addresses both behavioral difficulties and learning impediments.

METHODOLOGY

Research Design

The entire plan or approach utilized to carry out a research study, including the techniques for gathering and analyzing data, is referred to as the research design. A research design aids in guaranteeing that the study is carried out methodically and rigorously and that the findings are legitimate and dependable. (Thomson, N., Proulx, M., & Lindsay, S. 2017).

The descriptive-qualitative research methodology was applied in this study. A fact-finding study using a descriptive research method entails a thorough and accurate interpretation of the findings in order to characterize a particular current situation.

By employing the descriptive technique, the researcher hopes to investigate and explore the reasons of a specific condition as well as characterize the characteristics of the condition that existed during the study period. In order to create a logical and cogent conclusion and suggestions for the study, the researcher decided to employ this kind of research methodology, taking into account the goal to obtain first-hand information from the respondents. The purpose of descriptive method research was to collect data regarding the current state of affairs, according to Creswell (1994). Since the primary focus of this study is the opinions of a subset of elementary school teachers in the Indanan South District of MBHTE-SULU, the descriptive method was the most suitable approach to employ.

The study used a qualitative approach as its methodology. The study's qualitative methodology was comprised of the questionnaire, which was based on the respondents' own perceptions, personal observations, and comments.

Research Locale

This study was conducted in elementary schools of Indanan South District MBHTE-SULU located at Municipality of Indanan Sulu. Among the 18 schools of Indanan Douth district, the researcher chooses only 10 schools to conduct this study. The targeted schools namely the following: Sapah Malaum Elementary School, Panglima Misuari Elementary School, Panglima Hajan Elementary School, Manilup Elementary School, Langpas Elementary School, Mukammali Elementary School, Población Elementary

School, Panglima Indanan Central School, Bunot Elementary School, and Dayuan Elementary School.

Respondents of the Study

The respondents of this study were the intermediate teachers of Elementary School at Indanan South District MBHTE-SULU.

The target respondent at least 100 elementary teachers handling intermediate level. It is according to their demographic profile.

Table 1. Distribution of the Respondents according to school

INDANAN SOUHT DISTRICT	NO. OF TEACHERS
1.Sapah Malaum Elem. School	10
2.Panglima Misuari Elem. School	10
3.Panglima Hajan Elem. School	10
4.Manilup Elem. School	10
5.Mukammali Elem. School	10
6.Langpas Elem. School	10
7.Poblacion Elem. School	10
8.Pasil Elem. School	10
9.Bunot Elem. School	10
10.Dayuan Elem. School	10
TOTAL	100

Sampling Design

The researcher used the purposive sampling technique to identify and select the 100 participants from the teachers of Indanan South District Elementary School MBHTE-Sulu, all the teachers handling the intermediate level. The inclusion criteria was used in choosing the participants of the study were the following; The participants was officially teachers of Indanan South District, and have at least 5 years in service. The participants

were selected from the teachers handling the intermediate level, who monitor the behavioral tendencies of intermediate pupils.

Data Gathering Procedure

The researcher prepared the survey questionnaire, and asked first the permission from Dean of Graduate Studies, the school principals from the different schools in Indanan South District Elementary School, MBHTE-SULU to conduct the study. Right after the approval, the researcher disseminated the questionnaire to the respondents personally to avoid being bias during the survey. After at least 10 minutes for each respondent, the questionnaires were retrieved.

Research Instrument

The researcher used a standardize instrument adapted from the study of Precy I. Guerra (2014) about the behavioral tendencies of intermediate pupils at Indanan South District Elementary School MBHTE-SULU.

The questionnaire consisted of 2 parts. Part (1) deals with the demographic profile of the respondents which include their age, gender, educational attainment, and length of services. Part (2) consist of the elements of the behavioral problem of intermediate pupils at Indanan South District Elementary School MBHTE-SULU. their responses were categorized using the Likert's scale to make it more convenient to answer and interpret.

Statistical Treatment of Data

Both descriptive and inferential tools were employed in the treatments of data gathered for this study.

1. For research question number 1, the statistical tools used was Frequency and Percentage to determine, the socio-demographic profile of the respondents in terms of age, gender, educational attainment, and civil status.

2. For problem number 2, Standard Deviation and the weighted mean were the statistical tools used to determine the extent of behavioral tendencies of intermediate pupils at Indanan South District Elementary School, MBHTE-Sulu. Perceive by the teachers in terms of; activity level, emotional control, and aggression and destructiveness.

3. For research question number 3, T-test and One-way Analysis of Variance (ANOVA) were the statistical tools used for independent samples to determine the significant different in the extent of behavioral tendencies of intermediate pupils at Indanan South District Elementary School, MBHTE-Sulu, as perceived by the teachers in terms of; activity level, emotional control, and aggression and destructiveness; when data are grouped according to their demographic profile; age, gender, educational attainment and civil status.

4. For problem number 4, the statistical tools used was Pearson Product-Moment Correlation to determine the significant correlation among the sub-categories subsumed

under Behavioral tendencies among intermediate pupils at Indanan South District Elementary School, MBHTE-Sulu.

RESULTS AND DISCUSSION

1. ***What is the demographic profile of the respondents in terms of: Age, Gender, Educational Attainment, and Civil Status?***

1.1 In terms of Age

Table 1.1 presents the demographic profile of teacher-respondents in terms of age. It can be seen from this table that out of 100 teacher-respondents, 9 (9.0%) is from the age group of 20 years old and below, while 28 (28.0%) are 21-30 years old, and 63 (63.0%) are 31 years old and above. This study reveals that more than one-half of the total teacher-respondents involved in this study are within 31 years old and above of age brackets. This further implies that most of teacher-respondents involved in this study belong to the upper level of age group as categorized in this study.

Table 1.1 Demographic profile of teacher-respondents from Indanan South District Elementary school in terms of age.

Age	Number of respondents	Percent
20 years old and below	9	9.0%
21-30 years old	28	28.0%
31 years old and above	63	63.0%
Total	**100**	**100%**

1.2 In terms of Gender

Table 1.2 shows the demographic profile of teacher-respondents in terms of gender. It can be gleaned from this table that out of 100 teacher-respondents, 24 (24.0%) are male, and 76 (76.0%) are female. This study reveals that more than on-half of the total number of teacher-respondents involved in this study are female. This implies that great majority of the teacher-respondents from Indanan South District elementary school are predominantly female.

Table 1.2 Demographic profile of teacher-respondents from Indanan South District Elementary school in terms of gender.

Gender	Number of respondents	Percent
Male	24	24.0%
Female	76	76.0%
Total	**100**	**100%**

1.3 In terms of Educational Attainment

Table 1.3 presents the demographic profile of teacher-respondents in terms of Educational Attainment. It can be seen from this table that out of 100 teacher-respondents, 75 (75.0%) have bachelor's degree, 15 (15.0%) have bachelor's degree with Master's units, 8 (8.0%) have master's degree, and 2 (2.0%) have Doctorate degree. This study reveals that more than half of the total number of teacher-respondents have only bachelor's degree. This implies that the prevalence of bachelor's degrees among the teacher-respondents involved in this study suggest a need for an ongoing professional development and opportunities for career advancement among the elementary school teachers of Indanan South District.

Table 1.3 Demographic profile of teacher-respondents from Indanan South District Elementary school in terms of educational attainment.

Educational Attainment	**Number of respondents**	**Percent**
Bachelor's Degree	75	75.0%
Bachelor's degree with Master's units	15	15.0%
Master's degree	8	8.0%
Doctorate Degree	2	2.0%
Total	**100**	**100%**

1.4 In terms of Civil Status

Table 1.4 shows the demographic profile of teacher-respondents in terms of civil status. It can be seen from this table that out of 100 teacher-respondents, 34 (34.0%) are single, 62 (62.0%) are married, and 4 (4.0%) are either separated or widowed. This study shows that more than half of the total number of teacher-respondents are married. This result implies that Indanan South District Elementary school is pre-occupied by married elementary school teachers.

Table 1.4 Demographic profile of teacher-respondents from Indanan South District Elementary school in terms of civil status.

Civil Status	**Number of respondents**	**Percent**
Single	34	34.0%
Married	62	62.0%
Separated/Widowed	4	4.0%
Total	**100**	**100%**

2. What is the extent of Behavioral Tendencies of Intermediate pupils at Indanan South District Elementary School MBHTE-Sulu, as perceived by the teachers in terms of: 2.1 Activity level, 2.2 Emotional control; and 2.3 Aggression and Destructiveness?

2.1 In the context of Activity Level

Table 2.1 shows the extent of behavioral tendencies of intermediate pupils at Indanan South District Elementary School MBHTE-Sulu as perceived by elementary teachers in the context of Activity Level. This category obtained a total weighted mean score of **3.12** with standard deviation of **1.04310** which is rated as "Lesser extent". This result indicates that the teachers involved in this study affirmed that there is a lesser extent of behavioral tendency of elementary students among Indanan South District Elementary School. This implies that educators can prioritize reinforcing and celebrating positive behaviors within the school community. Implementing systems of recognition, such as praise, rewards, or merit-based programs, can encourage students to continue demonstrates desirable behaviors and contribute to a more positive school culture.

Notably, teacher-respondents rated the following items as "**Lesser extent**": "Run away if not constant supervised.", "Does not stay in seat during group sessions.", "Constantly runs or jumps around room.", "Fingers, feet, hands constantly in motion (tapping, drumming)", "Requires excessive supervision and control.", and "Out of seat without permission.".

Table 2.1 Extent of behavioral tendencies of intermediate pupils at Indanan south district elementary school MBHTE-Sulu: Teachers' perspective in the context of Activity Level.

	Statements	Mean	S.D	Rating
1	Run away if not constant supervised.	3.29	1.387	Lesser extent
2	Does not stay in seat during group sessions.	3.30	1.202	Lesser extent
3	Constantly runs or jumps around room.	3.02	1.247	Lesser extent
4	Highly distractible, does not attend for more than a minute.	2.94	1.127	Lesser extent
5	Fingers, feet, hands constantly in motion (tapping, drumming).	3.00	1.206	Lesser extent
6	Does not stay on task unless someone is standing over him/her.	3.16	1.126	Lesser extent
7	Requires excessive supervision and control.	3.20	1.189	Lesser extent
8	Highly impulsive, has great difficulty holding back a response.	3.18	1.242	Lesser extent
9	Make inappropriate noise during class.	3.07	1.241	Lesser extent

10	Out of seat without permission.	3.07	1.148	Lesser extent
Total Weighted Mean		**3.12**	**1.04310**	**Lesser extent**

Legend: (5) 4.50-5.00=Highest extent; (4) 3.50-4.49=Moderately extent; (3) 2.50-3.49=Lesser extent; (2) 1.50- 2.49=Least extent; (1) 1.00- 1.49=No extent at all

2.2 In the context of Emotional Control

Table 2.2 shows the extent of behavioral tendencies of intermediate pupils at Indanan South District Elementary School, MBHTE-Sulu: Teachers' perspective in the context of Emotional control. This category obtained a total weighted mean score of **2.73** with standard deviation of **1.03469** which is rated as "Lesser extent". This result indicates that the teachers involved in this study affirmed that there is a lesser extent of emotional control among elementary students at South District Elementary School. This implies that despite the lesser extent of negative emotional control, it is crucial to provide students with opportunities to learn and practice emotional regulation skills. Integrating lessons on identifying and managing emotions into the curriculum can empower students to navigate challenging situations effectively and develop healthy coping mechanisms.

Notably, teacher-respondents rated the following items, among others as "**Lesser extent**": "Severe negative reaction to criticism or correction.", "Blames own mistakes on others.", "Complains of unfairness even when equal privileges are given.", "Marked excessive mood swing for no appropriate reason." and, "Frightened and insecure in daily activities."

Table 2.2 Extent of behavioral tendencies of intermediate pupils at Indanan south district elementary school MBHTE-Sulu: Teachers' perspectivein the context of behavior.

Statements		**Mean**	**S. D**	**Rating**
1	Severe negative reaction to criticism or correction.	2.78	1.219	Lesser extent
2	Blames own mistakes on others.	2.74	1.116	Lesser extent
3	Tantrums if does not get own way.	2.68	1.154	Lesser extent
4	Complains of unfairness even when equal privileges are given.	2.63	1.178	Lesser extent
5	Acts suspicious on others.	2.88	1.409	Lesser extent
6	Marked excessive mood swing for no appropriate reason.	2.89	1.348	Lesser extent
7	Talks about suicide.	2.46	1.366	Least extent
8	Demand excessive praise.	2.66	1.157	Lesser extent
9	Overestimate own abilities.	2.76	1.224	Lesser extent
10	Frightened and insecure in daily activities.	2.77	1.317	Lesser extent
Total Weighted Mean		**2.73**	**1.03469**	**Lesser extent**

2.3 In the context of Aggression and Destructiveness

Table 2.3 shows the extent of behavioral tendencies of intermediate pupils at Indanan South District Elementary School, MBHTE-Sulu: Teachers' perspective in the context of Aggression and Destructiveness. This category obtained a total weighted mean score of 2.01 with standard deviation of 1.352 which is rated as "Moderately Agree". This result indicates a generally positive but somewhat mixed perception regarding the program's influence on behavioral aspects among the teacher-respondents. Involved in this study. Furthermore, this implies that while the preschool program has made strides in shaping certain behavioral aspects among participants, there may be room for further enhancement or refinement in specific areas.

Notably, teacher-respondents rated the following items, among others as "**Least extent**": "Engages in the self-harming behavior when she/he is frustrated. (Ex: scratching self or biting, etc.)", "Use inappropriate verbal expressions when frustrated? (Ex: yelling/ screaming, etc.)", "Automatically, cry when he/she can't answer the question or activities present.", "Uses appropriate verbal expressions when frustrated? (Ex: I need a break, or I need help)." and, "Displayed socially inappropriate behavior to gain attention from parents."

Table 2.2 Extent of behavioral tendencies of intermediate pupils at Indanan south district elementary school MBHTE-Sulu: Teachers' perspective in the context of behavior.

Statements		**Mean**	**S. D**	**Rating**
1	Violent temper tantrums (screaming, throwing self on floor)	2.50	1.453	Lesser extent
2	Uses objects as weapons against others.	2.59	1.371	Lesser extent
3	Aggressive to peers.	2.36	1.177	Least extent
4	Vandalism – damage public property.	2.26	1.194	Least extent
5	Interfere with other activities (blocking passage)	2.07	1.166	Least extent
6	Swear, curses, uses obscene language.	2.09	1.215	Least extent
7	Steals someone money property.	2.16	1.308	Least extent
8	Lies about situations, self, or others.	2.03	1.201	Least extent
9	Argues with teacher over behavior.	1.84	1.126	Least extent
10	Disrupts games, group activities by refusing to follow the rules.	2.01	1.352	Least extent
Total Weighted Mean		**2.19**	**.95770**	**Least extent**

3. Is there a significant difference in the extent of Behavioral Tendencies of Intermediate Pupils at Indanan South District elementary school MBHTE-Sulu, as perceived by the teachers in terms of: Activity level, Emotional control, and Aggression and Destructiveness; when data are grouped according to their demographic profile in terms of: 3.1 Age, 3.2 Gender; 3.3 Educational Attainment; and 3.4 Civil Status?

3.1 According to Age

Table 3.1 presents the difference in the extent of Behavioral Tendencies of Intermediate Pupils at Indanan South District Elementary School MBHTE-Sulu as perceived by the teachers when data are grouped according to their demographic profile in terms of age. As shown in this table, except for Aggression and Destructiveness, all the F-values and probability values under “Activity Level” are indeed significant at alpha 0.05. This means that though elementary teacher-respondents vary in their age, generally they differ in perception towards the extent of impact of Behavioral Tendencies of Intermediate Pupils at Indanan South District elementary school in the context of both Activity level and Emotional control. Meanwhile, they do not differ in their perception towards the extent of impact of Behavioral Tendencies of Intermediate Pupils at Indanan South District elementary school in the context of Aggression and Destructiveness. This further implies that teacher-respondents with the age range 51 years old and above may make him/her better perceiver toward extent of impact of preschool program in the case of Indanan South District compared to those within 25 years old and below as categorized in this study, or vice versa.

Hence, it is safe to say that variable age has indeed significant intervention in the ways how teacher-respondents at Indanan South District Elementary School perceive the extent of impact of Behavioral Tendencies of Intermediate Pupils at Indanan South District Elementary School. Therefore, the hypothesis which states that: “There is no significant difference in the subcategories subsumed under the extent of impact of Behavioral Tendencies of Intermediate Pupils at Indanan South District Elementary School when data are grouped according to their demographic profile in terms of age” is rejected.

Table 3.1 difference in the extent of Behavioral Tendencies of Intermediate Pupils at Indanan South District Elementary School MBHTE-Sulu as perceived by the teachers when data are grouped according to their demographic profile in terms of age.

Sources of Variation		Sum of squares	Df	Mean Square	F	Sig.	Description
Activity Level	Between Groups	16.264	2	8.132	8.625	.000	Significant
	Within Groups	91.453	97	.943			
	Total	107.717	99				
Emotional control	Between Groups	21.473	2	10.737	12.323	.000	Significant
		84.514	97	.871			

	Within Groups	105.988	99				
	Total						
Aggression and Destructiveness	Between Groups	1.923	2	.962	1.049	.354	Not Significant
	Within Groups	88.879	97	.916			
	Total	90.802	99				

* Significant at alpha 0.05

A Post Hoc Analysis using Tukey test was conducted to identify which among groups classified according to age have different levels of mean in the extent of impact of Behavioral Tendencies of Intermediate Pupils at Indanan South District Elementary as perceived by teachers when data are grouped according to respondents' demographic profile in terms of age.

On Activity Level: It shows that teacher-respondents who are from lower age group of 20 years old and below as categorized in this study obtained the mean difference of 1.49246* and 1.34603* with Standard Error of .37206 and .34601 and p-value of .000 and .001 which is both significant at alpha 0.05 over those teacher-respondents who are from the middle and upper age group of 21-30 years old and 31 and above years old, respectively. This indicates that teacher-respondents from lower age group are better perceiver on the extent of impact of Behavioral Tendencies of Intermediate Pupils at Indanan South District elementary in the context of activity level compared to those respondents involved in this study from middle and upper age group.

On Emotional control: It shows that teacher-respondents who are from lower age group of 20 years old and below as categorized in this study obtained the mean difference of 1.76190* and 1.45238* with Standard Error of .35767 and .33262 and p-value of .000 and .000 which is both significant at alpha 0.05 over those teacher-respondents who are from the middle and upper age group of 21-30 years old and 31 and above years old, respectively. This indicates that teacher-respondents from lower age group are better perceiver on the extent of impact of Behavioral Tendencies of Intermediate Pupils at Indanan South District Elementary School in the context of emotional control compared to those respondents involved in this study from middle and upper age group.

Table 3.1.1 Post Hoc Analysis: Differences in the extent of impact of Behavioral Tendencies of Intermediate Pupils at Indanan South District elementary as perceived by teachers when data are grouped according to age.

Dependent Variable	**(I) Grouping by Year Level**	**(J) Grouping Year Level**	**Mean Difference (I-J)**	**Std. Error**	**Sig.**
Activity Level	20 years old and below	21-30 years old	1.49246*	.37206	.000
		31 years old and above	1.34603*	.34601	.001

Emotional control	20 years old and below	21-30 years old	1.76190*	.35767	.000
		31 years old and above	1.45238*	.33262	.000

3.2 According to Gender

Table 3.2 presents the difference in the extent of Behavioral Tendencies of Intermediate Pupils at Indanan South District Elementary School, MBHTE-Sulu as perceived by the teachers when data are grouped according to their demographic profile in terms of gender. As shown in this table, except for Aggression and Destructiveness, all the F-values and probability values under “Emotional control” are indeed significant at alpha 0.05. This means that, male and female teacher-respondents involved in this study differ in their perception towards the extent of Behavioral Tendencies of Intermediate Pupils at Indanan South District Elementary School, MBHTE-Sulu. This further implies that being male student-respondent may make him a better perceiver toward the extent of impact of Behavioral Tendencies of Intermediate Pupils at Indanan South District Elementary School, or vice versa.

Hence, it is safe to say that variable gender has indeed significant intervention in the ways how teacher-respondents at Indanan South District Elementary School perceive the extent of impact of Behavioral Tendencies of Intermediate Pupils at Indanan South District elementary school. Therefore, the hypothesis which states that: “There is no significant difference in the subcategories subsumed under the extent of impact of Behavioral

Tendencies of Intermediate Pupils at Indanan South District elementary school when data are grouped according to their demographic profile in terms of gender” is rejected.

Table 3.2 Difference in the extent of Behavioral Tendencies of Intermediate Pupils at Indanan South District elementary school MBHTE-Sulu as perceived by the teachers when data are grouped according to their demographic profile in terms gender.

Variables	Grouping	Mean	S.D	Mean Difference	t	Sig.	Description
Activity Level	Male	3.8000	.85262	.89079	3.900	.000	Significant
	Female	2.9092	1.01011				
Emotional control	Male	3.2958	.94615	.75110	3.246	.002	Significant
	Female	2.5447	1.00072				
Aggression and	Male	2.1833	.73819	-.01009	-.045		Not Significant

Destructiveness	Female	2.1934	1.02155		.964

* Significant at alpha 0.05

3.3 According to Educational Attainment

Table 3.3 presents the difference in the extent of Behavioral Tendencies of Intermediate Pupils at Indanan South District Elementary School, MBHTE-Sulu as perceived by the teachers when data are grouped according to their demographic profile in terms of educational attainment. It can be gleaned from this table that all the F-values and probability values of the subcategories subsumed under the extent of Behavioral Tendencies of Intermediate Pupils at Indanan South District Elementary School,MBHTE-Sulu as perceived by the teachers are not significant at alpha 0.05. This means that though the teacher-respondents involved in this study vary in their educational attainment, generally they do not differ in their perceptions toward the extent of Behavioral Tendencies of Intermediate Pupils at Indanan South District Elementary School. It implies that teacher-respondents with doctorate degree may not be a better perceiver on the extent of Behavioral Tendencies of Intermediate Pupils at Indanan South District Elementary School compared to those who only have bachelor's degree, and vice versa.

Hence, it is safe to say that the educational attainment variable has no significant intervention in the ways how preschool teacher-respondents perceive the extent of Behavioral Tendencies of Intermediate Pupils at Indanan South District Elementary School. Therefore, the hypothesis which states that: "There is no significant difference in the subcategories subsumed under the extent of impact of Behavioral Tendencies of Intermediate Pupils at Indanan South District Elementary School when data are grouped according to their demographic profile in terms of educational attainment" is accepted.

Table 3.4 Difference in the extent of Behavioral Tendencies of Intermediate Pupils at Indanan South District elementary school MBHTE-Sulu as perceived by the teachers when data are grouped according to their demographic profile in terms of Educational Attainment.

Sources of Variation		Sum of squares	df	Mean Square	F	Sig.	Description
Activity Level	Between Groups	.557	3	.186	.166	.919	Not Significant
	Within Groups	107.160	96	1.116			
	Total	107.717	99				
Emotional control	Between Groups	.509	3	.170	.154	.927	Not Significant
	Within Groups	105.479	96	1.099			
	Total	105.988	99				
Aggression and Destructiveness	Between Groups	1.649	3	.550	.592	.622	Not Significant
		89.153	96	.929			

	Within Groups	90.802	99				
	Total						

* Significant at alpha 0.05

3.4 According to Civil status

Table 3.4 presents the difference in the extent of Behavioral Tendencies of Intermediate Pupils at Indanan South District Elementary School, MBHTE-Sulu as perceived by the teachers when data are grouped according to their demographic profile in terms of civil status. It can be gleaned from this table that all the F-values and probability values of the subcategories subsumed are not significant at alpha 0.05. This means that though the teacher-respondents involved in this study vary in civil status, generally they do not differ in their perceptions toward the extent of Behavioral Tendencies of Intermediate Pupils at Indanan South District Elementary School. It implies that married teacher-respondents may not be a better perceiver on the extent of Behavioral Tendencies of Intermediate Pupils at Indanan South District Elementary School compared to those who are single, and vice versa.

Hence, it is safe to say that the civil status variable has no significant intervention in the ways how preschool teacher-respondents perceive the extent of Behavioral Tendencies of Intermediate Pupils at Indanan South District elementary school as perceived by teachers. Therefore, the hypothesis which states that: “There is no significant difference in the subcategories subsumed under the extent of impact of Behavioral Tendencies of Intermediate Pupils at Indanan South District elementary school when data are grouped according to their demographic profile in terms of civil status” is accepted.

Table 3.4 Difference in the extent of Behavioral Tendencies of Intermediate Pupils at Indanan South District elementary school MBHTE-Sulu as perceived by the teachers when data are grouped according to their demographic profile in terms of civil status.

Sources of Variation		**Sum of squares**	**df**	**Mean Square**	**F**	**Sig.**	**Description**
Activity Level	Between Groups	4.470	2	2.235	2.100	.128	Not Significant
	Within Groups	103.247	97	1.064			
	Total	107.717	99				
Emotional control	Between Groups	2.874	2	1.437	1.352	.264	Not Significant
	Within Groups	103.114	97	1.063			
	Total	105.988	99				
Aggression and Destructiveness	Between Groups	.719	2	.360	.387	.680	Not Significant
	Within Groups	90.083	97	.929			
	Total	90.802	99				

4. Is there a significant correlation among the sub-categories subsumed under Behavioral Tendencies among Intermediate pupils at Indanan South District Elementary School MBHTE-Sulu?

Table 4 shows the correlation among the subcategories subsumed under the extent of Behavioral Tendencies of Intermediate Pupils at Indanan South District Elementary School as perceived by teachers. As shown in the table, the computed Pearson correlation Coefficients (Pearson *r*) between these variables are significant at alpha 0.05.

Furthermore, the correlational degree among the extent of Behavioral Tendencies of Intermediate Pupils at Indanan South District Elementary School as perceived by teachers is as follows:

1) Very High positive degree of correlation among the extent of Behavioral Tendencies of Intermediate Pupils at Indanan South District Elementary School as perceived by teachers between the context of Activity Level and Emotional control. This implies that promoting higher levels of activity in the classroom may positively influence students' emotional control. Educators should consider incorporating engaging and interactive learning activities to stimulate activity levels while also providing opportunities for students to develop and practice emotional regulation skills.

2) High positive degree of correlation among the extent of Behavioral Tendencies of Intermediate Pupils at Indanan South District Elementary School as perceived by teachers between the context of Activity Level and Aggression and Destructiveness.This implies that higher activity levels may potentially contribute to increased levels of aggression and destructiveness in students. Educators should be mindful of providing appropriate outlets for energy and promoting positive outlets for expression, such as physical activity breaks, creative outlets, or structured play.

3) High positive degree of correlation among the extent of Behavioral Tendencies of Intermediate Pupils at Indanan South District Elementary School as perceived by teachers between the context of Emotional control and Aggression and Destructiveness. This implies that students with lower levels of emotional control may be more prone to exhibiting aggressive or destructive behaviors. Educators should prioritize interventions aimed at promoting emotional regulation skills and providing support for students to manage and express their emotions in healthy ways.

Hence, it is safe to say that generally the Activity Level and behavior are highly correlated. Therefore, the hypothesis which states that “There is no the significant correlation among the sub-categories subsumed under the extent of Behavioral Tendencies of Intermediate Pupils at Indanan South District Elementary School as perceived by teachers” is rejected.

Table 4 shows the correlation among the subcategories subsumed under the extent of Behavioral Tendencies of Intermediate Pupils at Indanan South District Elementary School as perceived by teachers.

Variables Dependent	Independent	Pearson *r*	Sig.	N	Description
Activity Level	Emotional control	.827**	.000	100	Very High
	Aggression and Destructiveness	.611**	.000	100	High
Emotional control	Aggression and Destructiveness	.684**	.000	100	High

*Correlation coefficient is significant at alpha .05
Correlation Coefficient Scales Adopted from Hopkins, Will (2002):
0.0-0.1 = Nearly Zero; 0.1-0.3 = Low; 0.3-0.5 = Moderate; 0.5-0.7 = High; 0.7-0.9 = Very High; 0.9-1 = Nearly Perfect.

Conclusions

The study concludes the following:

1) The demographic profile of teacher-respondents in Indanan South District is characterized by a predominance of females. Additionally, a substantial majority falls within the age group of 31 years old and above of age brackets. Furthermore, majority of teacher-respondents are married and hold bachelor's degree. These findings provide valuable insights into the composition of teaching personnel in the district. It can be concluded that there is a need to form a strategy for teachers' professional development, and resource allocation to better meet the needs both the teachers and students at Indanan South District Elementary School.

2) Across all sub-categories assessed, activity level, emotional control, and aggression and destructiveness, teacher-respondents consistently rated these behavioral tendencies having "less extent." This consensus is reflected in the total weighted mean scores of 3.12, 2.73, and 2.01 for activity level, emotional control, and aggression and destructiveness, respectively. The accompanying standard deviations of 1.04310, 1.03469, and 1.352 suggest a degree of variability in perceptions among teacher-respondents but overall reinforce the notion of these behavioral tendencies being less extent within the intermediate pupils at Indanan South District Elementary School. These findings conclude the importance of addressing behavioral challenges and implementing targeted interventions to support the socio-emotional development of intermediate pupils at Indanan South District Elementary School.

3) Generally, the differing perceptions of teacher-respondents based on age and gender imply that these demographic factors may influence how behavioral tendencies are

observed and interpreted in the classroom. Understanding these nuances is crucial for educators to effectively support students in their behavioral development and create inclusive learning environments that cater to their unique needs.

4) Subcategories subsumed under the extent of Behavioral Tendencies of Intermediate Pupils at Indanan South District Elementary School have a high positively correlation implying a strong interdependency among subcategories subsumed. This correlation suggests that the various aspects of behavioral tendencies, as observed and perceived by teachers, are closely related and tend to align with one another.

Recommendations

This study recommends the following:

1) DepEd administrators should ensure access to support services such as counseling, special education, and health and nutrition programs to address the diverse needs of intermediate pupils at Indanan South District Elementary School and promote their holistic development.

2) Teachers at the Indanan South District Elementary School may prioritize their own professional development and growth to stay abreast of current research, best practices, and emerging trends in education. Engaging in ongoing training, workshops, and professional learning sessions focusing on behavior management strategies. Teacher's may not get tired of knowing and exploring ways that will help them reduce the behavioral problem.

3) Educators are encouraged to adopt a holistic approach to behavior assessment, considering multiple dimensions such as social, emotional, and academic behaviors. Implement frameworks or tools that facilitate comprehensive behavior assessment, allowing educators to capture the interconnected nature of student behavior more accurately.

4) More so, Future researchers in the field of education are encouraged to conduct study like this one to further assess the behavioral tendency of intermediate pupils and how will this impact their academic performance, socio-emotional development, and overall well-being.

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Compliance with Ethical Standards

First and foremost, each participant received a detailed informed consent form outlining the trial's objectives, procedures, possible risks and benefits, and confidentiality policies. In addition, all trial data points were meticulously anonymized when the respondents' personal information had no bearing on the trial's outcomes. Data collection was carried out in a private setting to protect participant privacy, and the collected data was stored in a secure archive that was only accessible by the researchers. All participants were treated with respect, regardless of differences in opinions and points of view.

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BRIDGING THE GAP: A COMPREHENSIVE NEEDS ASSESSMENT ON THE NUMERACY AND FINANCIAL LITERACY OF MANGYANS IN SOUTHERN LUZON, PHILIPPINES

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ABSTRACT

Within the rich cultural landscape of the Philippines, the Mangyan communities situated in Oriental Mindoro emerge as a distinctive and dynamic cultural group. Mangyan, as a comprehensive term, encompasses eight unique indigenous groups situated on the island of Mindoro in the southwestern region of Luzon, Philippines. This study focuses on the Mangyan communities in Oriental Mindoro, Philippines, specifically in Panaytayan, Mansalay. Comprising eight distinct indigenous groups, the Mangyans possess unique tribal identities, languages, and cultural practices. Despite their rich heritage, the interconnected and complex modern world presents challenges that require essential tools and knowledge. This study conducted a Needs Assessment on the Numeracy and Financial Literacy of Mangyans in Panaytayan, Oriental Mindoro, recognizing numeracy and financial literacy as pillars for informed decision-making and effective resource management. Data gathered from 150 individuals belonging to the Hanunuo Tribe in the Mangyan community undergoes sorting, tabulation, and interpretation, revealing significant gaps in numeracy skills and financial literacy. Consequently, the researchers proposed an extension program, "NUMFIN-MC: Nurturing Numeracy and Financial Literacy in Mangyan Community," emphasizing a community-centric approach. Collaboration with the Mansalay Local Government Unit, Research and Development Unit, Extension and Public Information Unit, College of Teacher Education, Mathematics Club, and community members is integral to the program's success. The findings underscore the critical need for targeted educational interventions among Mangyan individuas while acknowledging commendable financial literacy. The extension program aims to address these gaps, promoting economic empowerment and comprehensive

financial well-being within the Mangyan community in Panaytayan, Mansalay.

Keywords: *Needs Assessment, Numeracy, Financial Literacy, Mangyans in Oriental Mindoro*

INTRODUCTION

In the Philippines, Mangyan communities in Oriental Mindoro are known to have a unique and vibrant cultural group. As per Mnl.Op Inc (2019), the Mangyan group which is located in the southwestern part of Luzon, is composed of eight distinct indigenous groups. Each of these groups possesses its unique tribal identity, language, and cultural practices. In the Philippine archipelago, Mindoro is known to be the seventh-largest island with a collective name for the eight indigenous groups located in various Mindoro cities, known to have their names, languages, and set of customs, including Iraya, Alangan, Tadyawan, Tau-buid, Bangon, Buhid, Hanunuo, and Ratagnon.

Panaytayan, in Mansalay, Oriental Mindoro, is known to have multiple Mangyan communities, each with its unique set of cultural practices and traditions. Mangyan groups are rich in traditions and heritage and have thrived for generations in the luxurious sceneries of Mindoro. Nevertheless, as our world today becomes gradually interrelated and driven by economic intricacies, it is vital to ensure that every community has the knowledge and tools needed to navigate the challenges of this modern era. This brings the researchers to conduct a study about Needs Assessment on the Numeracy and Financial Literacy of Mangyans in Oriental Mindoro. Numeracy and financial literacy programs may serve as a way of empowering individuals and communities to make informed decisions, manage resources effectively, and plan for the future. While the Mangyans have preserved their cultural identity, they may face unique challenges in accessing and applying numerical and financial concepts in their daily lives.

According to Del Rosario M., 2021 numeracy is the capacity to obtain, use, interpret, and transmit mathematical facts and concepts to participate in and handle the mathematical problems faced in many situations during adult years. For Mangyan individuals, numeracy signifies the ability to acquire, utilize, interpret, and communicate mathematical facts and concepts, essential for engaging in and navigating various mathematical challenges encountered throughout adulthood. This proficiency empowers them to handle practical situations, such as managing finances, conducting trade, and addressing agricultural tasks that require mathematical reasoning. Numeracy allows Mangyan individuals to make informed decisions, interpret quantitative information, and actively participate in their communities, contributing to their overall ability to meet the mathematical demands of adult life.

Pecson, R.R. et al (2019) revealed that financial challenges disproportionately affect economically disadvantaged families, particularly those classified as indigent. Attaining a heightened level of financial literacy proves instrumental for these families in cultivating

effective financial management practices, fostering savings habits, making sound financial decisions, and judiciously investing their resources. Consequently, financial literacy emerges as a crucial life skill that transcends social statuses and demographics. It becomes imperative for individuals and families, irrespective of their background, to acquire financial education.

Indigenous groups may struggle to get access to formal education systems that promote numeracy skills due to isolation and geographic limitations. Basic calculations such as bargaining, purchasing items, and handling cash might be difficult without numeracy abilities. This might result in dependency on others or exploitation in commercial transactions. Empowering indigenous communities to design their numeracy solutions based on local needs and circumstances would make financial literacy training more accessible, equipping people with practical money management skills that they can use every day. Access to education would be a great help for these indigenous communities to cope with everyday living despite educational challenges.

A diverse group of communities embodying rich cultural traditions and a deep connection to the land is known as Mangyan people of the Philippines. According to the findings of Eduardo,J.P. et al. (2021) the global challenge of ensuring access to education for Mangyan community remains a pressing concern. Despite of international initiatives aimed at facilitating educational access for Mangyan community, there is still much room for improvement in implementation in the Philippines. The findings of Mahmudi, A. et al. (2019), show that being financially literate live a successful life in the future which consists of attitudes, knowledge, and financial skills. Additionally, Guhi P. (2019) revealed that mastering fundamental math abilities like counting, comparing, classifying, geometry, and critical thinking lays the essential groundwork for future mathematical proficiency and academic success. These competencies represent a pivotal stage in mathematical advancement that cannot be by passed. Competencies represent a vital phase in mathematical development and are indispensable; they form the prerequisite for acquiring more advanced skills. Students need a solid grasp of these basic skills before progressing to more complex mathematical concepts. The findings of Indefenso, E.E. et al. (2020) revealed that the findings revealed that there is a significant and positive correlation between numeracy and financial literacy. Similarly, it was revealed that a substantial and direct relationship between problem-solving ability and financial literacy exists. Kremer, S. et al. (2021) concluded that in order to enhance their monetary well-being, Indigenous communities need to enhance their financial literacy. Financial literacy is characterized as the extent to which an individual comprehends essential financial principles and has the capacity, as well as the confidence, to navigate personal finances by making prudent short-term decisions and engaging in thoughtful long-term financial planning, all while considering life events and adapting to changing economic conditions. Furthermore, it entails the knowledge and capability to surmount challenges and make sound financial decisions in day-to-day life.

This assessment aims to explore and understand the current state of numeracy and financial literacy within the Mangyan communities of Mansalay. By delving into the specific needs, strengths, and gaps in these areas, we hope to develop targeted

interventions that align with the cultural context of the Mangyans. The ultimate goal is to foster sustainable development, enhance economic resilience, and empower the Mangyan communities to thrive in the face of evolving societal dynamics. This research can also help policymakers and development practitioners construct culturally relevant initiatives to address the economic and financial issues faced by indigenous people in the Philippines.

Research Questions

Generally, this study aims to assess the needs of the selected Mangyan Communities in Panaytayan, Mansalay in terms of numeracy and financial literacy.

Specifically, this study aims to attain the following objectives:

1. Determine the level of proficiency of the selected Mangyan Community in Panaytayan, Mansalay in terms of their knowledge of basic arithmetic.
2. Examine the financial literacy levels among Mangyan individuals by assessing their knowledge and understanding of financial concepts such as budgeting, saving, marketing, and investing.
3. Based on the findings of the study, what intervention program may be proposed?

METHODOLOGY

The present study utilized the descriptive research method to evaluate the needs of the Mangyan community in Panaytayan, Mansalay. As outlined by McCombes, S. (2019), descriptive research seeks to provide precise and systematic descriptions of a population, situation, or phenomenon. In this study, it was employed to describe the level of proficiency in understanding and application of basic mathematical concepts. and assessing their knowledge and understanding of financial concepts such as budgeting, saving, investing, and debt management among the selected Mangyan individuals in Panaytayan, Mansalay.

The research was conducted in Barangay Panaytayan, Mansalay, Oriental Mindoro, which comprises 63 sitios. Four (4) sitios were chosen for the study: Sitio Calibang, Sitio Ether, Sitio Tanawan, and Sitio Sinugbuhan, all belonging to the Hanunuo Tribe. Purposive sampling, a method explained by Dovetail Editorial Team (2023), was employed to select participants based on specific characteristics relevant to the research interests. The participant distribution included 75 individuals in Sitio Calibang, 23 in Sitio Ether, 15 in Sitio Tanawan, and 38 in Sitio Sinagbuhan.

A researcher-made survey questionnaire served as the primary data collection instrument, designed to gauge the proficiency levels of the selected Mangyan individuals in Barangay Panaytayan, Mansalay. The questionnaire utilized dichotomous scales, prompting respondents to answer with either Yes or No. Using dichotomous scales in this

study offers a practical and effective means of gauging and addressing the immediate needs of the Mangyan population. The intended respondents consisted of 150 Mangyan individuals.

The gathered data underwent sorting, tabulation, and interpretation using descriptive statistics, including frequency count and percentage analysis. Frequency count determined how often a specific response appeared, while percentage analysis established the relationship between respondents answering Yes or No to the entire population. These statistical tools were instrumental in assessing the proficiency levels of arithmetic and financial education among the Mangyan community.

RESULTS

This presents the tabulation and textual representation of data used in the analysis of the research objectives of the study.

1. Level of proficiency of the selected Mangyan Community in Panaytayan, Mansalay in terms of their knowledge of basic arithmetic

Table 1. Level of proficiency of the respondents in terms of their knowledge of basic arithmetic

Statements	YES		NO	
	Frequency	Percentage	Frequency	Percentage
1. I know how to read numbers. *Ako ay marunong magbasa ng numero.*	46	31%	104	69%
2. I know how to write numbers. *Ako ay marunong magsulat ng numero.*	39	26%	111	74%
3. I know how to add numbers. *Ako ay marunong mag add ng numero.*	36	24%	114	76%
4. I know how to subtract numbers. *Ako ay marunong mag subtract ng numero.*	36	24%	114	76%
5. I know how to multiply numbers. *Ako ay marunong mag*	27	18%	123	82%

multiply ng numero.				
6. I know how to divide numbers. *Ako ay marunong mag divide ng numero.*	19	13%	131	87%

The table shows the level of proficiency of the respondents in terms of their knowledge of basic arithmetic.

As shown in the table, item number 1 constitutes 104 individuals, or 69% are non-readers in numbers, while only 46 individuals, or 31% can read numbers. Moving on to item number 2, a total of 111 individuals, comprising 74% are unable to write numbers, while 39 individuals, or 26% can write. In item number 3, it is shown that 114 Mangyan individuals, equivalent to 76% lack knowledge in adding numbers, leaving only 36 individuals, or 24% who possess this skill. Likewise, item number 4 indicates that 114 individuals, or 76% are unfamiliar with subtracting numbers, with only 36 individuals, or 24% having the ability to subtract numbers. Turning to item number 5, the 123 majority of individuals, or 82% lack proficiency in multiplying numbers, while the remaining 27 individuals, or 18% are the sole individuals who can multiply numbers. Finally, in item number 6, it is highlighted that 131 individuals constituting 87% are not proficient in dividing numbers, leaving only 19 individuals, or 13% who possess the skill of division.

2. Financial literacy levels among Mangyan individuals

Table 2. Level of financial literacy among Manggyan individuals

Statements	YES		NO	
	Frequency	Percentage	Frequency	Percentage
1. I know what money looks like. *Alam ko ang itsura ng pera.*	138	92%	12	8%
2. I sell goods/products. *Ako ay nagbebenta ng kalakal.*	122	81%	28	19%
3. I know how to give change. *Ako ay marunong magsukli.*	133	89%	17	11%
4. I know how to calculate capital in business. *Ako ay marunong magbilang ng puhunan sa kalakal.*	122	81%	28	19%
5. I know how to calculate profit in selling goods.	95	63%	55	37%

Ako ay marunong magbilang ng tinutubo sa pagbebenta ng kalakal.				
6. I save money from business. *Ako ay may naiipon galing sa kalakal.*	69	46%	81	54%

The table shows the financial literacy levels among Mangyan individuals.

As depicted in the table, item number 1 reveals that 138 individuals, comprising 92% are familiar with the appearance of money while only 12 individuals, or 8% are not. Moving on to item number 2, a significant majority of 122 Mangyan individuals, equivalent to 81%, engaged in selling goods/products, with only 28 individuals, or 19% not involved in such activities. In item number 3, 17 individuals, or 11% lack knowledge of providing change, whereas the majority, totaling 133 individuals, or 89%, are proficient in giving change. However, in item number 4, 122 individuals, or 81%, demonstrated the ability to calculate capital in their business, while only 28 individuals, or 19% did not engage in capital calculation for their business. Regarding the calculation of profit in selling goods, as indicated in item number 5, 95 Mangyan individuals, or 63% performed the calculation, whereas 55 individuals, or 37%, did not calculate their profit. Lastly, in item number 6, 69 individuals, or 46%, have savings from their business, while 81 individuals, or 54%, do not maintain savings.

3. Proposed Intervention Program

Based on the findings of the study, the researchers proposed an extension program entitled: "NUMFIN-MC: Nurturing Numeracy and Financial Literacy in Mangyan Community" aims to equip Mangyan individuals of selected sitios of Mansalay, Oriental Mindoro with fundamental numeracy skills, including addition, subtraction, multiplication, and division, enabling them to perform essential mathematical operations with confidence and enhance financial literacy among Mangyan individuals, providing them with knowledge and skills needed to manage money, save, and make wise financial decisions.

DISCUSSION

Table 1 implies that a significant portion of the Mangyan individuals in Panaytayan possess limited numerical knowledge, as evidenced by the high percentages of individuals who cannot read or write numbers, and who lack basic arithmetic skills such as addition, subtraction, multiplication, and division. Lack access to education due to the distance of schools, leading them to choose not to attend.

According to Eduardo J. et. Al, (2021), access to education for Indigenous people is a global issue. There are several international efforts aimed at providing IPs with access to education, but the Philippines' adherence and implementation of these measures still leave much to be desired. Increased commitment and comprehensive assistance from the Local Government Unit (LGU) would prove advantageous in delivering appropriate education to our Indigenous Peoples (IPs) citizens.

Table 2 implies that the high percentages of individuals familiar with the appearance of money and actively involved in selling goods/products reflect a strong foundation in basic financial concepts and entrepreneurial activities within the community.

Furthermore, the majority's proficiency in providing change and calculating both capital and profit in business indicates a commendable level of financial literacy. These findings revealed the potential for economic empowerment and sustainable financial practices within the Mangyan community in Panaytayan, Mansalay.

However, the data also highlight areas for potential improvement, particularly in terms of individuals not engaged in selling goods/products, lacking knowledge in providing change, and not maintaining savings from business. Educational initiatives and support programs addressing these could contribute to a more comprehensive financial well-being for the community.

It was supported by the findings of Mahmudi, A. et al. (2019), revealed that possessing financial literacy sets the stage for a prosperous future, encompassing attitudes, knowledge, and practical financial skills.

The proposed an extension program entitled: "NUMFIN-MC: Nurturing Numeracy and Financial Literacy in Mangyan Community" also aims to enhance the numeracy skills and financial literacy foundation of the Mangyan community through tailored interventions. The focus will be on implementing specialized numeracy programs designed to address identified gaps in foundational arithmetic operations. To ensure maximum impact, these programs will employ innovative and culturally sensitive teaching methods, tailored to the Mangyan community's unique context.

Simultaneously, the extension program will strengthen the community's financial literacy foundation by introducing initiatives that explore advanced financial concepts. This includes comprehensive modules on savings management, investment strategies, and financial planning. By examining these aspects, the program seeks to empower individuals within the Mangyan community to make well-informed economic decisions, contributing to their overall financial well-being.

The extension program will be characterized by a community-centric approach, involving active collaboration with the Mansalay Local Government Unit, Research and Development Unit, Extension and Public Information Unit, College of Teacher Education, Mathematics Club, and community members. Workshops, interactive sessions, and resource materials will be customized to align with the cultural nuances and preferences

of the Mangyan community in Panaytayan, Mansalay, sustaining relevance and meaningful connection. The program's success will be measured through ongoing assessments and feedback mechanisms of Mangyan individual, allowing for continuous improvement and adaptation to the evolving needs of the community. This extension program aspires to instill lasting positive changes in numeracy skills and financial literacy, fostering empowerment and sustainable economic practices within the Mangyan community in Panaytayan, Mansalay.

Conclusions

The revealed data highlight the critical need for targeted educational interventions among the Mangyan community in Panaytayan, Mansalay as indicated by high percentages of non-readers in numbers, unfamiliar to numbers and limited proficiency in basic arithmetic operations such as addition, subtraction, multiplication, and division. Addressing these areas is crucial for empowering individuals with essential skills for daily life and future opportunities. To highlight the positive side, the community's familiarity with the appearance of money and active involvement in selling goods/products highlight a solid foundation in basic financial concepts and entrepreneurial activities. Moreover, the majority's proficiency in providing change, calculating capital, and managing profits revealed a commendable financial literacy and business insight. While these findings suggest potential for economic empowerment, careful consideration is needed in areas that require improvements, such as engaging more individuals in selling goods/products, enhancing knowledge in providing change and promoting savings from business.

Recommendations

To strengthen the numeracy skills of Mangyan individuals, it is recommended to implement tailored numeracy programs that target the identified gaps in foundational arithmetic operations such as addition, subtraction, multiplication, and division. These programs should go beyond conventional approaches, incorporating culturally sensitive and community-centric teaching methods to ensure increased participation and effectiveness. Simultaneously, the community's financial literacy foundation can be enhanced by introducing initiatives that delve into advanced financial concepts. These efforts should emphasize areas such as investment strategies, savings management, and financial planning to empower individuals to make well-informed economic decisions. Entrepreneurship workshops and support programs play a crucial role in encouraging more community members to participate in selling goods/products. These initiatives offer insights into sustainable business practices, market analysis, and effective financial management, fostering a flourishing business market. To instill a savings culture, programs should be initiated to educate individuals on the sustainable benefits of saving from business profits, incorporating accessible and culturally relevant mechanisms. Collaborative efforts involving Mansalay Local Government Units, educational institutions, and community leaders are crucial for the success of these educational and financial literacy initiatives. This collaborative approach creates a wholistic approach both educational and economic aspects, promoting the comprehensive well-being of the Mangyan community. Regular monitoring and evaluation mechanisms are essential,

ensuring the ongoing success of the implemented programs by assessing impact and identifying areas for continuous improvement. This adaptive strategy enables the community to respond effectively to immediate feedback and evolving needs, fostering sustainable growth and development of Mangyan individuals.

Compliance with Ethical Standards

Prior to conducting this research study, the researchers sought permission from the Local Government Unit of Mansalay, Oriental Mindoro. The researchers informed the participants about the purpose and process of the study. To ensure participant safety, researchers conducted one-on-one interviews, while also observing and ensuring participants' privacy and confidentiality by collecting data through respondents' questionnaire responses. The researchers ensure that the study does no harm to the respondents, and it should be beneficial for it to be worth implementing.

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CENTRAL LUZON PUBLIC LIBRARIES: BUILDING INCLUSIVE SPACES THROUGH ANTIRACIST EDI KNOWLEDGE AND PRACTICES

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ABSTRACT

This study investigates the current state of Equity, Diversity, and Inclusion (EDI) knowledge and practices in public libraries of Central Luzon, Philippines. A survey was used to assess library staff's awareness and implementation of EDI initiatives. The findings will guide the development of a diversity management plan to promote inclusive library services. This research aims to address the gap in EDI research within Philippine librarianship.

Keywords: *public libraries, EDI (Equity, Diversity, Inclusion), anti-racism initiatives, diversity management plans, inclusive library services*

INTRODUCTION

Equity, Diversity, and Inclusion (EDI) have become core principles for many institutions, moving beyond mere compliance obligations. Public libraries, as bastions of community engagement, have a responsibility to cultivate welcoming and inclusive spaces for all. This study explores the current state of EDI knowledge and practices within public libraries in Central Luzon, Philippines.

A recent report by the American Library Association (ALA) underlines the importance of EDI in libraries. The 2021 publication emphasizes the need for libraries to foster inclusive environments that reflect the diversity of their communities. This study builds upon this call to action by investigating the current landscape of EDI efforts in public libraries of Central Luzon.

By understanding the current state of EDI practices, this study seeks to empower libraries to create more inclusive spaces that serve all members of the community.

The Importance of Diversity, Equity, and Inclusion (EDI) in Libraries

Public libraries serve as cornerstones of a democratic society, providing free access to information and fostering a sense of community. The American Library Association (ALA) emphasizes this role in its Strategic Directions, highlighting libraries' essential role in enabling diverse communities to participate fully (ALA, 2017).

Diversity is not just a moral imperative; it strengthens libraries' ability to serve all patrons. Finch (2022) argues that exposure to diverse viewpoints and cultural experiences enhance critical thinking skills and cultural literacy. Libraries, as "nuclear social points" (Princh, 2021), have a unique opportunity to cultivate respect for individuals from different backgrounds through inclusive collections, programming, and services.

The Association of College and Research Libraries (ACRL) reinforces this notion in its Diversity Standards (2012), asserting that diversity is a core value for libraries and a societal necessity. A diverse and inclusive library environment empowers all patrons to reach their full potential (ACRL, 2012).

The Need for Strategic Diversity Management

The success of EDI efforts hinges on a well-defined strategic plan. The USAID Workplace Diversity Management Module (2018) outlines the importance of such a plan in establishing a clear rationale for investment and providing direction towards achieving diversity goals. The module details a comprehensive strategic planning process, encompassing needs assessments, goal setting, and strategy development (USAID, 2018).

Furthermore, the module outlines key steps for designing a diversity plan, including forming a task force, conducting a diversity audit, and establishing a strategic plan with measurable goals and objectives (USAID, 2018). Regular monitoring and evaluation are crucial for ensuring the plan's effectiveness (USAID, 2018).

Research Gap and Current Study's Contribution

While the importance of EDI in libraries is well-established, research on implementing and evaluating EDI initiatives in public libraries, particularly within the Philippine context, remains limited. Existing studies often focus on academic libraries or specific aspects of diversity, such as cultural competency or collection development (Luo & Agyei-Mensah, 2019; Koechler, 2018).

This study aims to address this gap by investigating the current state of EDI knowledge and practices in public libraries of Central Luzon, Philippines. By assessing the level of awareness, implementation, and potential gaps, this research will guide the development

of a practical diversity management plan specifically tailored to the needs of public libraries in the Philippines.
The proposed plan will contribute to the ongoing conversation on EDI in libraries by providing a framework for promoting inclusive services and fostering a welcoming environment for all patrons.

Synthesis

This literature review has established the critical role of EDI in libraries and the importance of strategic planning for successful implementation. However, research specifically focused on public libraries in the Philippines remains limited. This study aims to address this gap by investigating EDI knowledge and practices in Central Luzon public libraries. The findings will guide the development of a practical diversity management plan, ultimately contributing to a more inclusive library environment for all patrons within the Philippine context.

Research Questions

This study investigates Equity, Diversity, and Inclusion (EDI) with a focus on antiracist practices in public libraries of Central Luzon, Philippines. It explores the current state of knowledge and implementation of these principles through three key research questions:

1. Knowledge of EDI Antiracism. How knowledgeable are public library personnel in Central Luzon about EDI principles, particularly regarding antiracism practices?

2. Implementation of EDI Antiracism. To what extent do public libraries in Central Luzon implement EDI and antiracism policies and procedures within administration, human resources, and service delivery?

3. Knowledge-Practice Gap. Is there a gap between the awareness of EDI antiracism principles and their actual implementation in Central Luzon public libraries?

4. Diversity Management Plan. How can a diversity management plan be designed to enhance EDI and antiracist practices in public libraries of Central Luzon?

METHODOLOGY

This study employed a descriptive research design to investigate the current state of Equity, Diversity, and Inclusion (EDI) knowledge and practices within public libraries of Central Luzon, Philippines. Descriptive research seeks to describe the characteristics of a population or phenomenon without manipulating variables or establishing cause-and-effect relationships (Tang & Chaw, 2016). This approach is well-suited for this study's

objectives, which aim to understand the level of awareness and implementation of EDI initiatives in public libraries.

The target population for this study consisted of all public libraries in Central Luzon that are affiliated with the National Library of the Philippines. A total of 22 libraries fell into this category. Participants were recruited through the Public Libraries Division. A written communication was sent to all 22 libraries inviting them to participate in an online survey.

Out of the 22 libraries contacted, 15 responded and completed the online survey, resulting in a response rate of 68.18%.

To assess EDI knowledge and implementation, the study employed a modified version of the EDI Antiracism Readiness Survey by Marci Ramiro-Jenkins. The modifications focused on grouping the survey items into three categories: administration, human resources, and service delivery. The survey form or research instrument has two parts. Part 1 obtained information on public libraries' level of knowledge on EDI Antiracism policies and practices. Data on the degree of EDI Antiracism policies and practices implementation were acquired in Part 2.

The modified questionnaire was validated using face validation where two experts (e.g., reference librarian in a public library, and a library educator-researcher) had been invited to check the applicability of the items and the categories under which the items were clustered.

After the questionnaire was test piloted, the Cronbach alpha was computed using JAMOVI to check the internal consistency and reliability of the questionnaire. The computed Cronbach alpha is 0.822 which is good.

Descriptive statistics, including frequency distribution, percentiles, ranking, mean, and standard deviation, were employed to analyze the collected data. These methods helped to present, summarize, and interpret the findings related to the level of knowledge and implementation of EDI/antiracism policies and practices within the public libraries.

Range Interval	Descriptive Rating/Interpretation
4.17 – 5.00	Completely Extensive
3.35 – 4.18	Highly Extensive
2.51 – 3.34	Moderate
1.67 – 2.50	Somewhat Limited
0.83 – 1.66	Very Limited
0.00 – 0.82	No Provision at All

RESULTS

Table 1 presents the EDI Antiracism level of knowledge of public libraries in terms of administration. Among the indicators, public libraries have highly extensive level of knowledge on implementing antiracism policies (mean=3.93; SD=2.58), acting on biased, racist, and xenophobic behaviour from staff and patrons, and reframing from generalization (mean=3.86; SD=0.833, SD=0.743, respectively). Meanwhile, public libraries' level of knowledge on the implementation of internal policies for responding to hate speech, hate crimes, and hate propaganda at the library is moderate (mean=3.26; SD=0.457). Generally, it was reported that public libraries' level of knowledge is highly extensive in terms of administration (mean=3.82; SD=0.489).

Table 1.
EDI Antiracism Knowledge Level of Public Libraries in Terms of Administration

Indicators	Mean	SD	Verbal Interpretation
1. Implementing of library antiracist policies	3.93	0.258	Highly Extensive
2. Advocating library commitment to diversity, equity, inclusion, and antiracism	4.26	0.457	Completely Extensive
3. Implementing internal policies for responding to hate speech, hate crimes, and hate propaganda at the library	3.26	0.457	Moderate
4. Acting on biased, racist, and xenophobic behaviour from staff and patrons	3.86	0.743	Highly Extensive
5. Reframing from generalization	3.86	0.833	Highly Extensive
6. Including persons with disabilities in the planning, implementing, and evaluating of library services, programs, and facilities	3.80	0.676	Highly Extensive
Total	**3.82**	**0.489**	**Highly Extensive**

Table 2 presents the EDI antiracism knowledge level of public libraries in terms of human resources. In general, public libraries' level of knowledge in terms of human resources is highly extensive (mean=3.79; SD=0.763) similar with their knowledge level in terms of administration. Supporting equal employment opportunity for gay, lesbian, bisexual, and transgender and other LGBTQ+ librarians and library workers (mean=3.93; SD=0.798), increasing diversity through job postings and hiring practices (mean=3.60; SD=1.242), and supporting staff from underrepresented groups (mean=3.53; SD=0.833) are among the indicators which at the top of the list in terms of their knowledge level on human resources.

Among the other indicators, developing pathway on reporting microaggressions, emotional labour, or sharing experiences that reflect racial inequity, disadvantages, or oppression was reported to be moderate (mean=3.26; SD=0.457), while supporting for

continuing professional development, professional growth, and success was the indicator which is on the top of the list (mean=4.66; SD=0.487).

Table 2.
EDI Antiracism Knowledge Level of Public Libraries in Terms of Human Resources

Indicators	Mean	SD	Verbal Interpretation
1. Increasing diversity through job postings and hiring practices	3.60	1.242	Highly Extensive
2. Supporting staff from underrepresented groups	3.53	0.833	Highly Extensive
3. Supporting equal employment opportunity for gay, lesbian, bisexual, and transgender and other LGBTQ+ librarians and library workers	3.93	0.798	Highly Extensive
4. Supporting for continuing professional development, professional growth, and success	4.66	0.487	Completely Extensive
5. Developing pathway on reporting microaggressions, emotional labour, or sharing experiences that reflect racial inequity, disadvantages, or oppression	3.26	0.457	Moderate
Total	**3.79**	**0.763**	**Highly Extensive**

Table 3 presents the EDI antiracism knowledge level of public libraries in terms of services. Public libraries' level of knowledge on discouraging racial discrimination of a patron or a co-worker is completely extensive (mean=4.33; SD=0.487), while their knowledge on conducting equity evaluations to determine the unfairly impact or service among members of their community is moderate (mean=2.73; SD=0.928).

Table 3.
EDI Antiracism Knowledge Level of Public Libraries in Terms of Services

Indicators	Mean	SD	Verbal Interpretation
1. Providing bilingual or multilingual staff at the library to serve its demographic needs	1.93	0.798	Somewhat Limited
2. Providing library facilities that serve patrons with disabilities	2.33	0.975	Somewhat Limited
3. Integrating of assistive technology to meet the needs of people with a broad range of disabilities (including learning, mobility, sensory, and developmental disabilities)	2.26	1.032	Somewhat Limited
4. Discouraging racial discrimination of a patron or a co-worker	4.33	0.487	Completely Extensive

5. Conducting equity evaluations to determine unfairly impact or service among members of their community	2.73	0.928	Moderate
6. Removing of communication barriers (by providing translation services in other languages according to demographic needs)	1.06	0.771	Very Limited
Total	**2.92**	**0.998**	**Moderate**

Table 4 presents the implementation level on EDI antiracism policies and practices in public libraries in terms of administration. In general, the implementation level of antiracism policies and practices is moderate (mean = 2.92; SD = 0.888), particularly on advocating library commitment to diversity, equity, inclusion, and antiracism (mean = 3.20; SD = 0.909), implementing of library antiracist policies (mean = 3.06; SD = 0.771), and acting on biased, racist, and xenophobic behaviour from staff and patrons (mean = 2.80; SD = 1.107). While public libraries have highly extensive level of implementation on reframing from generalization (mean = 3.93; SD = 0.771), they have somewhat limited level of implementation on implementing internal policies for responding to hate speech, hate crimes, and hate propaganda at the library (mean = 2.53; SD = 0.956), and in including persons with disabilities in the planning, implementing, and evaluating library services, programs, and facilities (mean = 2.00; SD = 0.816).

Table 4.
Level of Implementation of EDI Antiracism in Terms of Administration

Indicators	Mean	SD	Verbal Interpretation
1. Implementing of library antiracist policies	3.06	0.771	Moderate
2. Advocating library commitment to diversity, equity, inclusion, and antiracism	3.20	0.909	Moderate
3. Implementing internal policies for responding to hate speech, hate crimes, and hate propaganda at the library	2.53	0.956	Somewhat limited
4. Acting on biased, racist, and xenophobic behaviour from staff and patrons	2.80	1.107	Moderate
5. Reframing from generalization	3.93	0.771	Highly Extensive
6. Including persons with disabilities in the planning, implementing, and evaluating of library services, programs, and facilities	2.00	0.816	Somewhat Limited
Total	**2.92**	**0.888**	**Moderate**

Table 5 presents the extent of implementation of EDI antiracism policies and practices in public libraries in terms of human resources. In general, the implementation level of antiracism in terms of human resources is moderate (mean = 2.91; SD = 0.749), particularly in supporting staff from underrepresented groups (mean = 3.06; SD = 0.853), increasing diversity through job postings and hiring practices (mean = 2.67; SD = 0.942), and in supporting equal opportunity for gay, lesbian, bisexual, and transgender and other LGBTQ+ librarians and library workers (mean = 2.60; SD = .0711). It was reported that public libraries have highly extensive level of implementation on supporting for continuing professional development, professional growth, and success (mean = 3.93; SD = 0.771), while their implementation level on developing pathway on reporting microaggressions, emotional labour, or sharing experiences that reflect racial inequity, disadvantages, or oppression is somewhat limited (mean = 2.33; SD = 0.471).

Table 5.
Level of Implementation of EDI Antiracism in Terms of Human Resources

Indicators	Mean	SD	Verbal Interpretation
1. Increasing diversity through job postings and hiring practices	2.67	0.942	Moderate
2. Supporting staff from underrepresented groups	3.06	0.853	Moderate
3. Supporting equal employment opportunity for gay, lesbian, bisexual, and transgender and other LGBTQ+ librarians and library workers	2.60	0.711	Moderate
4. Supporting for continuing professional development, professional growth, and success	3.93	0.771	Highly Extensive
5. Developing pathway on reporting microaggressions, emotional labour, or sharing experiences that reflect racial inequity, disadvantages, or oppression	2.33	0.471	Somewhat Limited
Total	**2.91**	**0.749**	**Moderate**

Table 6 presents the level of implementation of EDI antiracism policies and practices in public libraries in terms of services. Public libraries have very limited level of implementation on removing of communication barriers (by providing translation services in other languages according to demographic needs) (mean = 1.73; SD = 0.679), providing library facilities that serve patrons with disabilities (mean = 1.53; SD = 0.805), providing bilingual or multilingual staff at the library to serve its demographic needs (mean = 1.40; SD = 0.711), and in integrating of assistive technology to meet the needs of people with a broad range of disabilities (including learning, mobility, sensory, and developmental disabilities) (mean = 1.33; SD = 0.699). While public libraries' level of implementation on discouraging racial discrimination of a patron or a co-worker is highly extensive (mean =

3.67; SD = SD = 0.942), conducting equity evaluations to determine the unfairly impact or service among members of their community is found to be moderate (mean = 2.80; SD = 0.832).

Table 6.
Level of Implementation of EDI Antiracism in Terms of Services

Indicators	Mean	SD	Verbal Interpretation
1. Providing bilingual or multilingual staff at the library to serve its demographic needs	1.40	0.711	Very Limited
2. Providing library facilities that serve patrons with disabilities	1.53	0.805	Very Limited
3. Integrating of assistive technology to meet the needs of people with a broad range of disabilities (including learning, mobility, sensory, and developmental disabilities)	1.33	0.699	Very Limited
4. Discouraging racial discrimination of a patron or a co-worker	3.67	0.942	Highly Extensive
5. Conducting equity evaluations to determine unfairly impact or service among members of their community	2.80	0.832	Moderate
6. Removing of communication barriers (by providing translation services in other languages according to demographic needs)	1.73	0.679	Very Limited
Total	**2.07**	**0.778**	**Somewhat Limited**

To determine whether there are any significant differences between the level of awareness and application of EDI policies and practices in public libraries, an independent T-test was used. The average scores for level knowledge and implementation were 3.83 (SD = 0.18), as shown in Table 7, and 2.92 (SD = 0.77), respectively. The outcome demonstrates that there is a statistically significant difference between public libraries' awareness and implementation of EDI policies and practices [t (15) = 3.61687, p >.05]. Compared to their level of implementation, public libraries' knowledge in this context indicated a greater level.

Table 7.
Mean Scores and T-Values Difference in Level of Knowledge Implementation of EDI Policies and Practices in Terms of Administration

Level of Extent (Administration)	n	Mean	SD	df	t	Sig.
Knowledge	15	3.83	0.18	28	3.61687	.001162
Implementation	15	2.92	0.77			

Significant at P< .05 (2-tailed)

The mean scores on level knowledge and implementation of EDI policies and practices in public libraries, as shown in Table 8, were 3.80 (SD = 0.23) and 2.92 (SD = 0.34), respectively, in terms of human resources. There was a substantial disparity between knowledge level and implementation [t (15) = 4.49073, p >.05]. In other words, in terms of human resources, the level of expertise of public libraries does not match the level of their application of EDI policies and practices.

Table 8.
Mean Scores and T-Values Difference in Level of Knowledge and Implementation of EDI Policies and Practices in Terms of Human Resources

Level of Extent (Human Resources)	n	Mean	SD	df	t	Sig.
Knowledge	15	3.80	0.23	28	4.49073	.000111
Implementation	15	2.92	0.34			

Significant at P< .05 (2-tailed)

Another independent T-test was used to determine whether there is a significant difference in terms of services between the level of knowledge and implementation of EDI policies and practices in public libraries. Table 9 shows that the mean levels of knowledge and implementation were 2.44 (SD = 0.10) and 2.08 (SD = 0.13), respectively. The findings indicate that there is a statistically significant difference [t (15) = 2.94656, p >.05] between public library knowledge and implementation of EDI policies and practices. In this context, public libraries' knowledge demonstrated a higher level than their implementation level.

Table 9.
Mean Scores and T-Values Difference in Level of Knowledge and Implementation of EDI Policies and Practices in Terms of Services

Level of Extent (Services)	n	Mean	SD	df	t	Sig.
Knowledge	15	2.44	0.10	28	2.94656	.006409
Implementation	15	2.08	0.13			

Significant at P< .05 (2-tailed

DISCUSSION

This study investigated the application of Equity, Diversity, and Inclusion (EDI) principles in public libraries of Central Luzon, Philippines. The findings reveal a significant discrepancy between public libraries' awareness of EDI concepts and their actual implementation (Tables 7, 8, & 9). Across all three categories (administration, human resources, and services), libraries exhibited a statistically higher level of knowledge compared to implementation.

This aligns with existing research in library and information science (LIS). Finch (2022) emphasizes the potential of libraries as institutions that can promote social justice by challenging the status quo. However, several studies point to challenges in translating EDI values into actionable practices. Koechler (2018) highlights the need for concrete strategies and ongoing evaluation for effective EDI implementation in academic libraries. Similarly, Luo & Agyei-Mensah (2019) call for practical frameworks to bridge the gap between theoretical understanding and practical application of diversity initiatives within academic libraries.

The current study suggests several factors potentially contributing to this knowledge-practice gap in public libraries:

- Limited Resources. Inadequate staff time and funding for training and development programs can hinder effective EDI implementation (ACRL, 2012).

- Unclear Goals. The lack of clear and measurable goals for EDI initiatives makes it difficult to track progress and hold libraries accountable (USAID, 2018).

- Resistance to Change. Potential resistance from library staff or the communities served might create roadblocks to implementing inclusive practices.

Conclusions

In terms of administration and human resources, public libraries have extensive knowledge of EDI antiracism policies and practices, while services are moderate. Meanwhile, the level of implementation of EDI antiracism policies and practices is moderate in terms of administration and human resources, and services are somewhat limited.

It was discovered that there was a statistically significant difference between public libraries' awareness and implementation of EDI policies and practices in terms of administration. In comparison to their level of implementation, public libraries' knowledge in this context was higher. In terms of human resources, public libraries' level of expertise does not correspond to the extent to which they apply EDI policies and practices. In terms

of services, public libraries' knowledge demonstrated a higher level of implementation than their knowledge level.

Recommendations

While Marci Ramiro-Jenkins's EDI Antiracism Readiness Survey provides a foundation for determining whether a specific public library is ready to implement antiracism policies and practices, it is recommended that public libraries continuously assess their level of readiness. The proposed Diversity Management Plan for public libraries is recommended during the process.

(Public Library) Diversity Management Plan
Plan period: from – to

Message from the Public Library Head

Definitions
Diversity: representing and integrating people with diverse characteristics and backgrounds into our organization.

Inclusion: valuing and respecting the uniqueness of our people and providing them with the opportunity and support needed for them to contribute to organizational mission and goals.

Focus Areas

- **E**quitable Administration
- **D**iversified Human Resources
- **I**nclusive Services

Focus Area	Diversified Human Resources
Goal	Create an empowering and inclusive work environment and culture in which employees can fully contribute their abilities.
Objective 1	Encourage a healthy balance of work and personal life.
Strategy 1.1	Implement flexible work arrangements
Activities	1.1.1 Create policies and procedures to support flexible work arrangements. 1.1.2 Inform all employees of new policies and procedures via email and during staff meetings.
Indicators	• Created and distributed flexible policies and procedures to all employees • The number of employees who benefit from flexible working arrangements.

	• Work-life balance issues reduced turnover rate by (percent)

Objective 2	Support staff for continuing professional development, professional growth, and success
Strategy 2.1	Help employees with their professional development, growth, and success.
Activities	2.1.1 Create a workplace diversity and inclusion training manual 2.1.2 Create a training plan 2.1.3 Organize training sessions 2.1.4 Create a report on training workshops that have been implemented, including training evaluation.
Indicators	• Employees participated in diversity and inclusion training (percent) • Employees said the training improved their understanding of workplace diversity and inclusion concepts (percent)

Compliance with Ethical Standards

This study adhered to ethical research principles by ensuring informed consent from all participants. Participants were informed that their participation was voluntary and would not incur any cost.

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CHALLENGES IN LEARNING SCIENCES AMONG SENIOR HIGH SCHOOL SCIENCE, TECHNOLOGY, ENGINEERING, AND MATHEMATICS (STEM) STUDENTS OF PRIVATE SCHOOL IN INDANAN, SULU

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ABSTRACT

Science education is one of the most crucial subjects among Senior high School students especially in the Science Technology Engineering and Mathematics Strand (STEM). This study aimed to explore the challenges of learning science among senior high school STEM students of SCT Inc. and to determine the factors in learning sciences. Data were collected through a survey questionnaire. Frequency count and percentage were used to determine the demographic profile of the respondents and mean and standard deviation were used to determine the extent of challenges in learning Sciences in terms of teacher factors, subject matter, student ability, parental support, T-tests for gender, and (ANOVA) for other profile were used to determine the significant difference, and correlational analysis to determine the significant correlation between the extent of the challenges in learning Sciences in terms of teacher factors, subject matter, student ability, and parental support. It was found that more than half of the respondents are between 18 – and 19 years old, 140 are females, more than half earn P5,000.00 and below monthly, and less than half of their parents reached the elementary level, no significant difference was found when data are grouped according to other profiles except in terms of age, and moderate relationship was found between the teacher factors and subject matter and low correlation between student ability and parental support. By analyzing the challenges of STEM students and educators can refine their teaching methodology, incorporate more effective instructional techniques, and create a more engaging and supportive learning environment.

Keywords: *Challenges, Science, STEM Students, Sulu College of Technology Inc.*

INTRODUCTION

Science nowadays has become prevalent in our society, it became revolutionized in the community which made a high standard of education significant for both students and teachers as well, revolutionized in a sense that it is indeed continuous as uttered by Sabbaha N. et. al, (2024) Learning is the soul of education that eliminates ignorance within individual's mind, it is an ability possessed by human being that plays a crucial role in the existence of human life, from the moment a person was brought into this world, the process of learning begins until he or she reaches the stage of late adulthood which means that learning is a continuous process. It utilizes humanism which involves the holistic you, focusing the mental, emotional, and moral development. Many ways of studies like analyzing, assessing, applying, giving hypotheses, and most especially giving an evaluation to any problem concern and proven data.

All educational programs, from basic to higher, have included science instruction. The scientific curriculum makes a distinction between how science and technology are used in day-to-day human endeavors. A. Hasni & P. Potvin (2015) stated in school, students have an interest in studying science especially if it is emphasized clearly, logically, and comprehensively. Science and technology inhibit a dominant position in the growth and progress of the nation. It helps in developing progress that leads to the advancement and success of a country. Despite the positive feedback of studying science education, it has been observed that learners are fearful of studying the subject. This implies the negative attitude and poor performance of the learners in learning science and technology.

In today's 21st century, students are facing multiple problems in the field of science education. Explanations based on science and technology will likely offer corrective measures to some of these difficulties. Yet, as we recognize today, science and technology are inaccessible to a vast human population. Some of society's persistent problems today are linked to the depletion of natural resources, growing poverty, hunger, and illiteracy in many nations worldwide.

Kaptan & Timurlenk (2012) stated that some of the pressing challenges in learning science are an insufficient number of science teachers, lack of motivation among learners and low self-assurance in learning science, huge numbers of students in every class, broken connection with other lessons, inadequate number of laboratory equipment and facilities, insufficient time distribution for science education despite the intensive curriculum. With the inception of Education 4.0, students are likewise expected to be digitally literate to learn science better.

In the Philippines, most of the students are facing several challenges, examples are family problems, poverty, the large number of students in each classroom, lack of

motivation and low self-confidence, difficulty in science, and bullying. Each of these problems has a great impact on the student's learning process.

John Rae & Rianna Yvette (2020), The absence of resources and infrastructure for science education presented several issues. There are further difficulties with the language of instruction, the learners' backgrounds, and the absence of parental support. These difficulties have a detrimental impact on learning and should be immediately addressed.

Jailani, A. et.al, (2024) Although the pandemic may have passed by now, its effects are still felt, thus education needs to continue. We all think that education is the key to success, thus it shouldn't be interrupted, so the government has come up with a way to meet the demands of the kids while allowing the children to continue their education. Since student learning is one of the government's top concerns, the concept of continuous education has been under fire.

RESEARCH QUESTIONS

This paper sought to investigate the extent of challenges in learning sciences among Senior High School STEM students of Sulu College of Technology Inc., this study aims to answer the following question:

1. What is the demographic profile of Senior High School STEM students of Sulu College of Technology Inc. in terms of;
    1.1 Age;
    1.2 Gender;
    1.3 Parents' Average Monthly Income; and,
    1.4 Parent's Educational Attainment?

2. What is the extent of the challenges encountered in learning Sciences among Senior High School STEM Students of Sulu College of Technology Inc. to;
    2.1 Teacher Factors;
    2.2 Subject Matter;
    2.3 Student Ability; and
    2.4 Parental Support?

3. Is there a significant difference in the challenges encountered in learning Sciences among Senior High School STEM Students of Sulu College of Technology Inc. when data are grouped according to age, gender, parents' average monthly income, and parents' educational attainment?

4. Is there any significant correlation among the sub-categories subsumed under challenges in learning Science among senior high school STEM students of Sulu College of Technology Inc. as to Teacher Factors, Subject Matter, Student Ability, and Parental Support?

METHODOLOGY

Locale of the study

This study was conducted in one of the Private schools in the Municipality Indanan province of Sulu. Chinese School formerly known as Tonjing, and founded by Engr. Sambas I. Hassan Al-Haj, SULU COLLEGE OF TECHNOLOGY INC. during the school year 2021-2022, To find out the challenges in learning science among Senior high school in the said school.

Research Design

The study used a correlational research design with survey questionnaires as the main instrument for gathering the required data. The present study surveyed the challenges in learning science among senior high school STEM students of Sulu College of Technology Inc. Research is concerned with relationships between variables without the research controlling or manipulating any of them and reflects the strength and/or direction of the relationship between two or more variables which prevail in group cases chosen for the study using quantitative approaches.

Correlational research is a type of non-experimental research method in which a researcher measures two or more variables, the correlational study looks for variables that seem to interact with each other when you say one variable changes you have a fair idea of how other variables will change. This method is very appropriate because the study involved understanding and assessing the statistical relationship between the variables of the challenges in learning science by senior high school Science, Technology, Engineering, and Mathematics (STEM) students. The questionnaire is the main instrument used to gather data needed in the study.

Sampling Design

The sampling technique used in this particular study was purposive sampling, which means that the researcher purposively chose all the senior high school Science, Technology, Engineering, and Mathematics (STEM) students of Sulu College of Technology Inc. Two hundred (200) students were optimized as subjects.

Research Instrument

To answer the specific problems in this research, the instrument adopted from the study of John Rae (2020) will be used to achieve the aim of the study but some applicable changes are made to shape the present study. It consists of two (2) parts. Part I seeks information about the respondent’s sex, gender, parents' average monthly income, and educational attainment. The next part is the respondents’ problems in learning science, which includes teacher factors, Subject Matter, Student Ability, and Parental Support. The

respondent will choose from Strongly Agree, Agree, Fair, Disagree, and Strongly Disagree check one answer on the corresponding box that describes their response.

Statistical Treatment of Data

A descriptive statistical tool was appropriately employed in the treatment of data to be gathered for this study, namely:

1. For research number one (1) Frequency counts and percentages will be employed to determine the profile of Senior High School STEM Students.

2. For research number two (2) Mean and standard deviation will be employed to determine the extent of challenges encountered in learning science among senior high school STEM students of Sulu College of Technology Inc. during the School Year 2021-2022.

3. For research problem number three (3) T-tests for independent samples will be employed to determine the significant differences in the extent of Challenges encountered in learning science among senior high school STEM students of Sulu College of Technology Inc. when they are grouped according to gender. One-way Analysis of variance (ANOVA) will be employed to determine the significant differences when they are grouped according to age, parents' average monthly income, and parents' educational attainment.

4. For research problem number four (4) Pearson Product Moment Correlation Coefficient (Pearson's r) will be employed to determine the degree of correlation among the sub-categories subsumed under the extent of Challenges encountered in learning science among senior high school STEM students of Sulu College of Technology Inc.

Scope and Delimitation

This study focuses on challenges in learning sciences among senior high school STEM students in Sulu College of Technology Inc. The respondent of this study is delimited to the Science Technology Engineering and Mathematics students of Sulu College of Technology Inc. during the school year 2022-2023.

RESULTS AND DISCUSSION

1. *What is the demographic profile of the Senior High School STEM students of Sulu College of Technology Inc. in terms of 1.1 age, 1.2 gender, 1.3 parents' average monthly income, and 1.4 parent's educational attainment*?

Table 1.1 Demographic Profile in terms of Age

Age	Number of Respondents	Percentage
16 – 17 years old	64	32%
18 – 19 years old	104	52%
20 years old and above	32	16%
TOTAL	**200**	**100%**

1.1 **Demographic Profile of the Respondents in terms of Age**

Table 1.1 shows the demographic profile in terms of age. It showed that 32% of the respondent are between 16-17 years of age, 52% are between 18 – 19 years old, and only 16% are 20 years old and above.

Table 1.2 Demographic Profile in terms of Gender

Gender	Number of Respondents	Percentage
Male	50	25%
Female	150	75%
TOTAL	200	100%

1.2 Demographic Profile of the Respondents in terms of Gender

Table 1.2 presents the demographic profile in terms of gender. It showed that 75% of the respondents are females and only 25% are males.

Table 1.3 Demographic Profile in terms of Parents' Average Monthly Income

Parents' Average Monthly Income	Number of Respondents	Percentage
P5,000.00 and below	130	65%
P5,001.00 – 10,000.00	46	23%
P10,001 – 15,000.00	16	8%
P15,001 and above	8	4%
TOTAL	200	100%

1.3 Demographic Profile of the Respondents in terms of Parents' Average Monthly Income

Table 1.3 presents the demographic profile of the respondent in terms of the parent's average monthly income. It showed that 65% of the parents earn P5,000.00 and below monthly and only 4% earn P15,001.00 and above monthly.

Table 1.4 Demographic Profile in terms of Parent's Education Attainment

Parent's Educational Attainment	Number of Respondents	Percentage
Elementary Level	74	37%
High School Level	44	22%
College Level	54	27%
Post Graduate	28	14%
TOTAL	200	100%

1.4 Demographic Profile of the Respondents in terms of Parent's Educational Attainment

Table 1.4 presents the parent's educational attainment. It showed that 37% of the parents are elementary level and only 14% reached postgraduate in education.

2. What is the extent of the challenges encountered in learning Sciences among Senior High School STEM students of Sulu College of Technology Inc. as to; teacher factors, subject matter, student ability, and parental support?

Table 2.1 Extent of the Challenges Encountered in Learning Sciences among Senior High School STEM Students of Sulu College of Technology Inc. as to Teacher Factors

Statements	Mean	Interpretation
1. My Teacher does not have a proficient mastery of science concepts.	1.63	Disagree
2. My Teacher does not use creative and intriguing methods of teaching.	1.62	Disagree
3. My Teacher does not instruct science effectively.	1.73	Disagree
4. My Teacher does not ignite my curiosity in my scientific lessons.	1.89	Disagree
5. My science teacher did not have enough preparation before going to class.	2.22	Disagree
6. The teacher's method of teaching Science, does not Improve my academic performance.	2.32	Disagree
7. My Science Teacher has made me feel anxious.	2.28	Disagree
8. Teachers do not allow students to use other references on Science Subjects.	2.55	Fair
9. The teaching techniques of my teacher are more learner-centered.	2.39	Disagree
10. Teachers are more dependent on ICT.	2.30	Disagree
Average	**2.10**	**Disagree**

LEGEND 5(Strongly Agree) 4.50 – 5.00 4(Agree) 3.50 – 4.49 3(Fair) 2.50 – 3.49 2(Disagree)1.50 – 2.49 Disagree 1(Strongly Disagree)1.00 – 1.49

In **Table 2.1** on the extent of challenges encountered in terms of teacher factors, the result showed that the respondents **disagreed** on nine (9) of the statements and some of these are; teaching techniques of the teacher are more learner-centered (mean = 2.39) and the teachers are more dependent on ICT (mean = 2.30). One (1) of the statement showed **fair.** The average mean of 2.10 which means the respondents **disagree** on the extent of the challenges encountered in terms of teacher factors.

The result implies that the respondents do not agree that the challenges they encountered in learning Sciences have something to do with the teacher factors.

Black & Wiliam (1998) Interaction between teachers and students is essential for teaching to be effective in generating learning. For most students, a teacher's one-way instruction is ineffective. A crucial component of this engagement is assessment for learning, which is a refined version of formative assessment. A thorough analysis of the Research has demonstrated that there is strong evidence that formative evaluation raises students' attainment as determined by summative assessment, resulting in notable gains in test scores. This kind of assessment has always been discouraged, especially for science teachers.

According to Abdurahman (2024) instructor at MBHTE-Sulu majority (50%) are between the ages of 36 and 45; in terms of their educational background eligibility, 110 people (61.1%) have completed their bachelor's degree. Furthermore, the majority (44.4%) of those with teaching experience have worked for five to ten years which is why the teachers are qualified to teach and the students do not agree that the challenges they encountered in learning sciences have something to do with teacher factors.

Table 2.2 Extent of the Challenges Encountered in Learning Sciences among Senior High School STEM Students of Sulu College of Technology Inc. as to Subject Matter

Statements	Mean	Interpretation
1. Properties and structure of matter are complex.	2.55	Fair
2. The parts and functions of animals and plant cells are difficult to understand.	2.71	Fair
3. Topics about heredity are unclear to me.	2.74	Fair
4. Biodiversity and evolution involve complex topics.	2.66	Fair
5. The symbiotic relationship in the ecosystem is hard to understand.	2.42	Disagree
6. The processes of learning about energy are complex.	2.71	Fair
7. The processes of calculating force and motion are complicated.	2.54	Fair
8. Concepts in geology are not simplified.	2.15	Disagree

9. Topics in meteorology are confusing.	2.23	Disagree
10. Concepts in astronomy are unclear.	2.34	Disagree
Average	**2.51**	**Fair**

LEGEND 5(Strongly Agree) 4.50 – 5.00 4(Agree) 3.50 – 4.49 3(Fair) 2.50 – 3.49 2(Disagree)1.50 – 2.49 Disagree 1(Strongly Disagree)1.00 – 1. 49

In **Table 2.2** on the extent of the challenges encountered in terms of subject matter, the result showed that the respondents indicated fair on 6 statements and disagreed on the rest of the statements. Among those they indicated **fair** are; topics about heredity are unclear to them (mean = 2.74) and the parts and functions of animals and plant cells are difficult to understand (mean = 2.71). Among those they **disagreed** are; that the symbiotic relationship in the ecosystem is hard to understand (mean = 2.42) and concepts in Astronomy are unclear (mean = 2.34,). The average mean of 2.51 is interpreted as **fair** on the challenges encountered in learning Sciences in terms of subject matter.

It implies that the subject matter in sciences is somehow challenging to the Senior High School STEM students of Sulu College of Technology Inc.

According to Tan & Kim (2020), The rapid growth of science and technology has brought to light societal and cultural norms and values, as well as changes in the environment and climate. These factors have a tremendous influence on children and youth's lives and, consequently, on how they learn.

Table 2.3 Extent of the Challenges Encountered in Learning Sciences among Senior High School STEM Students of Sulu College of Technology Inc. as to Student Ability

Statements	Mean	Interpretation
1. I face difficulty in analyzing experiments even when there is an example given.	2.49	Disagree
2. I do not perform well in science.	2.38	Disagree
3. Science is more difficult for me than for many of my classmates.	2.45	Disagree
4. I do not learn things quickly in science.	2.47	Disagree
5. I have a poor conceptual and procedural understanding of science.	2.40	Disagree
6. I have poor reading comprehension skills in science activities.	2.39	Disagree
7. Poor study habits in science subjects affect my Academic performance.	2.66	Fair
8. I have poor analytical thinking in science.	2.44	Disagree
9. Lack of experience in Experimenting.	2.34	Disagree
10. Have an insufficient background in science in the lower grades.	2.38	Disagree

Average	**2.44**	**Disagree**

LEGEND 5(Strongly Agree) 4.50 – 5.00 4(Agree) 3.50 – 4.49 3(Fair) 2.50 – 3.49 2(Disagree)1.50 – 2.49 Disagree 1(Strongly Disagree)1.00 – 1. 49

In **Table 2.3** on the extent of the challenges encountered in terms of student ability, the respondents indicated **fair** in only one statement and that is that poor study habits in science subjects affect their academic performance (mean = 2.66). Nevertheless, they indicated **disagree** with the other 9 statements, and among these are; that they face difficulty in analyzing experiments even when there is an example given (mean =2.49), they do not learn things quickly in science (mean = 2.47), and Science is more difficult for them than many of their classmates (mean = 2.44,). The average mean of 2.44 is interpreted as **disagree** with the challenges encountered in learning Sciences among STEM students of SCT Inc.

The result simply implies that student ability is not a problem as far as challenges encountered in learning Sciences among Senior High School STEM students of SCT Inc.

Similarly, to the study by John Rae & Rianna Yvette (2020), Students often don't face many difficulties in studying science from all angles using the quantitative outcomes of the research.

Table 2.4 Extent of the Challenges Encountered in Learning Sciences among Senior High School STEM Students of Sulu College of Technology Inc. as to Parental Support

Statements	Mean	Interpretation
1. My Parents cannot support my financial needs in science.	1.70	Disagree
2. My parents cannot assist me with my science project.	1.67	Disagree
3. My parents cannot support me with my studies in the science subject.	1.71	Disagree
4. My parents do not have an interest in guiding me in my experimental activities in the science subject.	1.85	Disagree
5. My Parents/Guardians do not attend our science-related programs and school activities.	2.04	Disagree
6. My Parents/Guardians do not encourage me to take Science at all levels.	2.02	Disagree
7. My Parents/Guardians are not concerned with my science output.	1.98	Disagree
8. My Parents/guardians are not used to monitoring my results formatively.	2.20	Disagree
9. My Parents/Guardians do not have contact with my science teacher to ask for my skills in the subject.	2.20	Disagree

10. My Parents/Guardians are not open-minded about this subject.	1.94	Disagree
Average	**1.93**	**Disagree**

LEGEND 5(Strongly Agree) 4.50 – 5.00 4(Agree) 3.50 – 4.49 3(Fair) 2.50 – 3.49 2(Disagree)1.50 – 2.49 Disagree 1(Strongly Disagree)1.00 – 1. 49

Table 2.4 on the challenges in learning Sciences in terms of parental support. The respondents indicated **disagree** with01256 all statements and some of these are; their parents/guardians do not attend their Science – related programs and school activities (mean = 2.40), their parents/guardians are not used to monitor their formative results (mean = 2.20), their parents/guardians do not have contact with them

Science teacher to ask for their skills in the subject (mean = 2.20, SD = .891). The average mean of 1.93 is interpreted as **disagree** on the extent of the challenges in learning Sciences among the Senior High School STEM students of SCT Inc.

The result simply implies that parental support does not add to the extent of the challenges in learning Sciences among the Senior High School STEM students of SCT Inc.

According to Evans (2006), Parenting programs are designed to improve or alter parents' attitudes, beliefs, and behaviors related to raising a child, as well as to raise awareness of the critical role parents play in fostering their children's growth and development.

3. Is there a significant difference in the extent of the challenges encountered in learning Sciences among Senior High School STEM students of Sulu College of Technology Inc. when data are classified according to age, gender, parent's average monthly income, and parent's educational attainment?

The t-test was used for gender since there are only two categories. The value of t =43.174 is greater than the p= .05, 2- tailed tests. It means that the null hypothesis is accepted.

There is no significant difference in the extent of the challenges encountered in learning Sciences among Senior High School STEM students of Sulu College of Technology Inc. when data are classified and grouped according to their gender.

Table 3.1 t-test for Significant Difference in terms of Gender

	T	Df	Sig.(2-tailed)	Mean difference	95% confidence interval of the difference	
					Lower	Upper
Gender	43.174	93	.000	1.798	1.72	1.88

Significant at .05 level

In **Table 3.2** Analysis of Variance (ANOVA) for age, parent's average monthly income, and parent's educational attainment was used. The f value of .008 for age is lesser than the sig. value of .05, the f value of 2.813 for the parent's average monthly income is greater than the sig. value of .05, and the f value of 1.253 for the parent's educational attainment is also greater than the sig value of .05. It could only mean that the null hypothesis is rejected in terms of age and accepted in terms of the parent's average monthly income and parent's educational attainment.

There is no significant difference in the extent of the challenges encountered in learning Sciences among Senior High School STEM students of Sulu College of Technology Inc. when data are classified according to parents' average monthly income and parents' educational attainment. However, there is a significant difference in terms of age. The result implies that the age of the respondents has something to do with the challenges encountered by the Senior High School STEM students of SCT Inc. in learning Sciences while parent's average monthly income and parent's educational attainment do not contribute to the challenges encountered by them.

The result supports that **Constructivist education** is predicated on the idea that rather than just having students absorb information, learning happens when students actively participate in the process of creating meaning and knowledge. The creators of meaning and knowledge are the learners. Constructivist education produces motivated, autonomous students and encourages critical thinking.

Table 3.2 ANOVA for Significant Difference in terms of Age, Parent's Average Monthly Income, and Parent's Educational Attainment

	Sum of Square	Distribution frequency	Mean Square	Frequency	Sig.
AGE					
Between Groups	.005	1	.005	.008	.930
Within Groups	60.208	92	.654		
Total	60.213	93			
Parent's Average Monthly Income					
Between Groups					
Within Groups	1.342	1	1.342	2.813	.097
Total	43.892	92	.477		
	45.234	93			
Parent's Educational Attainment					
Between Groups	1.050	1	1.050	1.253	.266
Within Groups	76.198	91	.837		
Total	77.247	92			

Significant at .05 level

4. Is there a significant correlation among the sub-categories subsumed under challenges in learning Sciences among Senior High School STEM students of Sulu College of Technology Inc. as to teacher factors, subject matter, student ability, and parental support?

There is a moderate correlation among the sub-categories subsumed under the extent of the challenges encountered in learning Sciences among Senior High School STEM students of SCT Inc. in terms of teacher factors and subject matter. However, there is a low correlation in terms of student ability and parental support.

Conclusions

The following was concluded based on the findings of the study:

The majority of the respondents in terms of age are at the right age for their present grade level. Most of the Senior High School students are females, more than half of the parents earn below the minimum a month, and only a few are considered highly educated.

The disagreement of the respondents in terms of teacher factors, student ability, and parental support only proves that they do not contribute so much to the challenges encountered in learning Sciences while subject matter contributes fairly to the challenges encountered The demographic profile of the respondents failed to show any differences in the extent of the challenges encountered in learning Sciences in terms of gender, parent's average monthly income, and parent's educational attainment proves that regardless of the aforementioned profiles, the respondents do not agree that they are contributory factors to the challenges encountered unlike age. It means the younger ones are challenged to a certain degree as compared to the older ones.

The moderate correlation in terms of teacher factors and subject matter goes to show that the variables are inseparable as far as teaching is concerned. Student ability and parental support however are not so much related to the challenges encountered in learning Sciences.

Recommendations

This study recommends the following:

1. Further study on the challenges encountered by students in learning Sciences should be conducted to make sure what affects them in learning the subject.

2. Future researchers on the same topic should add the variables like availability of laboratory facilities and the expertise of science teachers.

3. Science teachers should provide learners with activities that would challenge their imagination and curiosity about science.

4. Parents should support their children's education to lessen the challenges encountered by them in learning sciences.

Compliance with Ethical Standards

The researchers hereby attest that they have gained informed permission from the study respondents. Furthermore, the researchers guarantee the confidentiality of the data collected from participants. The research procedure was conducted with rigorous adherence to plagiarism guidelines, ensuring that the results were interpreted impartially and that their usage was limited to legitimate research.

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CONNIE'S METANOIA OVER DEPRESSION: A RELIGIOUSLY-INTEGRATED COGNITIVE BEHAVIORAL THERAPY CASE STUDY

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ABSTRACT

The case study examines Connie's experience with the Religiously-Integrated Cognitive Behavioral Therapy (RCBT). Data collection and analysis involve inductive, exploratory, interview, counseling session documentation, and content analysis. This is also a theological paper that uses the see-judge-act method, popularized by Pope John XXIII, to promote critical thinking and reflection on social situations. Connie, a Filipino professional teacher, recalled and faced devastating life events during the COVID-19 pandemic, which significantly impacted her mental health. The strict quarantine regulations forced Connie to miss school and church activities and social contact, feeling isolated and drained of memories. Connie, despite receiving weekly inspirational verses and prayers, continued to experience low mood and intrusive thoughts despite seeking help from her churchmates and pastor. She experienced psychological symptoms such as fear of infection, depression, anxiety, social isolation, and stigma, and was diagnosed with Major Depressive Disorder. Connie's thoughts of painful memories and extreme sadness recur, even if she was under medication already. Connie's 14-month counseling (RCBT) focused on addressing the separation from parents and depression, using cognitive reframing and mindfulness-based interventions. The counseling relationship was terminated based on Connie's progress. The intervention, i.e., RCBT, was found effective and beneficial for Connie. Consequently, the study affirms that faith formation,

family support, and access to mental health professional were crucial for Connie's healing journey.

Keywords: *case study, see-judge-act, metanoia, depression, counseling*

INTRODUCTION

The case of Connie is one of the many cases of Filipino professionals, who have faced devastating life events, yet are still church faithful, and quests for mental health and general wellbeing. The COVID19 pandemic have worsen the scenario, detrimental effects on the mental health of Filipinos were significantly noticed. In one study, they have investigated on the mental health impacts of the COVID-19 pandemic on respondents who have been quarantined since March 2020, aiming to determine if COVID stress predicts common mental health issues like stress, depression, and anxiety (Montano & Acebes, 2020).

Strict quarantine regulations, in effect for nearly a year, have forced close-knit families to be isolated; religious festivals have been abandoned, and churches have been forced to limit attendance; and schools have been closed (Dancel, 2021). Connie was among those who were pluck off from her usual routine of being in school, since she is a professional teacher, missed church activities and personal contact with churchmates, and felt isolated due to the restrictions and time mostly spent at the boarding house alone. These instances gave her more time to think, to recall, and eventually led her to remember dreaded memories and realities in her life.

During the recent epidemics and pandemic like COVID19, SARS, MERS, and Ebola, the fear of infection or death, helplessness, depression, anxiety, social isolation, and stigma are the most commonly reported psychological manifestations (Wafula et al., 2023). These psychological manifestations took toll on the life of Connie. She got so worried about the thoughts, especially memories, that occupies her mind most of the time. The teleconsultation with a psychiatrist gave her the opportunity to be diagnosed with Major Depressive Disorder and received medication.

She recounted that the medication gave her time to rest, relax, and sleep. The first-line treatment for depression is often a class of drugs called selective serotonin reuptake inhibitors (SSRIs), which work by increasing serotonin levels in the brain, a critical neurotransmitter that promotes communication between nerve cells (Schreiber, 2023). But once the medication’s effect tone down, she would easily return to her intrusive thoughts of painful memories and extreme sadness. To put things in context, depression is a global public health concern causing disability, higher morbidity, mortality, and medical costs, with 60% of individuals receiving effective medications, with response rates decreasing in comorbid conditions (Pearce et al., 2015).

She resorted to seeking the assistance of her churchmates and pastor. Religious and spiritual interventions are frequently viewed as a supplementary therapeutic option; since Christianity is one of the most popular religions, we concentrated on it here as the spiritual intervention (Leung & Li, 2023). However, the preparedness and promptness of providing the apt intervention for the current cares, concerns, and conditions of Connie were not met by these people. According to her, they gave her weekly inspirational and scriptural verses, and prayed for her, but to no avail, she would continue her low mood and hang on to her intrusive thoughts for the whole week up until she would visit the church again on a Sunday, once major restrictions were lifted.

After seeking assistance from a psychiatrist, a pastor, and fellow parishioners, Connie still feels that there is something wrong, there is something lacking. It is by this time, that a fellow teacher, her confidant, encouraged her to meet with a mental health professional so as to go through in-person counseling and psychotherapy.

This referral made it possible for Connie to meet me, a licensed counselor. She wrote on the form that records the main goal of the counseling session, “I want peace.” The quest for Connie’s peace is the problem that this study aims to record and report, and which the interventions through counseling have addressed.

Healing Journey. The World Health Organization recommends holistic interventions for those with mental health issues, so as to establish general health and wellness for the public in the biological, psychological, social, and spiritual domains (Degillo & Gayoles, 2020). Noteworthy to point though is the reality of communities facing systematically greater barriers to healthcare because of low access to primary and behavioral healthcare (Holt, Kibicho, & Bell-Calvin, 2022).

The COVID-19 pandemic has had a significant effect on people's mental health and overall wellbeing (Barbieri et al., 2022). The COVID-19 pandemic has resulted in challenges, including health inequalities, low health information literacy, shed light on government incompetence, and pervasive disinformation with detrimental effects on health (Jennings-Roche et al., 2023). During this wearisome times, mental health services faced challenges in delivering care, often utilizing telemental health technologies like phone and video calls (Luke et al., 2022). Also, the closure of churches and reduced participation in religious practices led to the proposal of indirect participation through the media (Dobosz et al., 2022). Overall, the COVID-19 pandemic has significantly impacted health systems globally, the Philippines for one, leading to reduced access to essential and non-essential health services due to lockdowns, travel restrictions, and staffing disruptions (Okunogbe et al., 2023).

Healing and recovery for those who are going through difficulties is deemed necessary, especially to those who are facing the ripple effects caused by the recent pandemic. On one hand, healing, a widely used concept in healthcare, is culture-dependent and requires a clear understanding of its applications which varies from different cultures and communities. Watson's theory, for example, emphasizes the

importance of healing, promoting healing through caring-healing modalities like music, therapeutic touch, aromatherapy, and relaxation. These interventions help relieve pain, accelerate wound healing, improve physical symptoms, and reduce chemotherapy side effects (Sadat-Hoseini et al., 2023). On the other hand, recovery has a tripartite understanding: clinical, personal, and social. Clinical recovery involves full symptom remission from mental illness, while personal recovery focuses on social aspects and psychiatric treatment. Personal recovery is a distinct process involving social aspects, partial remission despite residual symptoms, and minimal psychiatric treatment, both incorporate clinical aspects. Social recovery involves residential and economic independence (Nielsen, Buus, & Berring, 2023). For this study, pursuing the healing and recovery of Connie is important.

Religiously-integrated cognitive behavioral therapy. In the field of pastoral counseling, the religiously-integrated cognitive behavioral therapy is hypothesized to be beneficial for Connie. RCBT is a manualized therapeutic method that uses religious beliefs, practices, and resources to help individuals develop thoughts and behaviors that reduce depression (Pearce et al., 2015). Religiously integrated cognitive behavioral therapy (RCBT) uses religious traditions to improve well-being by replacing unhelpful thoughts and behaviors. Studies have shown its effectiveness in treating depression and anxiety in patients with various religious backgrounds (Degillo & Gayoles, 2020). Research indicates that incorporating spiritual and religious beliefs in therapy can reduce depression (Pearce et al., 2015).

Humans strive for complete health, addressing diverse factors through various perspectives like psychiatry, psychotherapy, and spiritual traditions in enhancing physical and mental health (Buju, 2019). The use of spiritually-integrated and religiously-integrated therapy has been in practice for quite some time. The study of de Abreu & Moreira-Almeida (2022), for example, analyzed randomized clinical trials comparing religion-adapted cognitive behavioral therapy (R-CBT) with control conditions in psychiatric disorder clients, utilizing their adapted manuals for data extraction. In addition, the study of Pečečnik & Gostečnik (2022), a systematic overview of research was presented on the use of spirituality as a potential treatment method for depression. Also, the study of Saged-Ali et al. (2022) explored the effectiveness of a religiously designed Islamic intervention in reducing depression and anxiety disorders among Muslim patients using a randomized controlled trial design. Furthermore, religion and spirituality are often integrated into treatment for addiction, HIV risk behavior, depression, and cancer, using spirituality-based therapies like Spiritual Self-Schema, mindfulness, and coping groups (Pearce et al., 2015).

These examples of the integration of psychological and spiritual innervations have shown remarkable and replicable initiatives in helping people heal and recover, leading to the betterment of their current mental health status.

Mental health status. Mental health is crucial for overall well-being, influenced by individual, social, cultural, and systematic stress sources (Madhani et al., 2023).

Meanwhile, the World Health Organization defines health as a comprehensive state of physical, mental, and social wellbeing, not just the absence of disease or infirmity (Aziz, Raines, & Wuensch, 2023). Consequently, in the present practice, spiritual wellbeing is acknowledged, hence making it as the biopsychosocialspiritual approach to wellbeing (Tan, 2023). In practice, mental health professionals emphasize the importance of incorporating spirituality in therapy, but often miss the mark to regularly assess and address this aspect in treatment planning (Charzyńska & Heszen-Celińska, 2020). Nonetheless, transforming mental illness into mental wellness has become sensible solutions and supports human sustainability in general (Crosby & Robertson, 2022).

The absence of mental wellness and interventions in the workplace for example, can jeopardize functioning and developing industries. The construction industry, for instance, is facing a surge in mental health disorders, leading to reduced work ability, increased accident and injury risk, and a potential "perfect storm" of mental health issues (Greiner et al., 2022). In the school setting as well, mental health wellness can be compromised if interventions could not be found. College students, for example, face numerous challenges during their transition from adolescence to emerging adulthood, including identity development, sexuality, substance abuse, grief, loss, family dysfunction, and changes in values. Stressors include new living arrangements, homesickness, academic achievement, time management, and social maladjustments. 85% of college students regularly feel overwhelmed, which can be linked to mental health conditions. Academic pressure and existing mental health conditions are among the top reasons for college students experiencing mental health problems (Kratt & Houdyshell, 2020).

The Philippines' first mental health act legislation, Republic Act no. 11036, was signed into law in June 2018, providing a rights-based framework for optimal mental healthcare implementation (Lally, Samaniego, & Tully, 2019). Aside from the approval of the Mental Health act and the experience of COVID-19 pandemic that altered the public interest in mental health in the Philippines, religion and spirituality can be potential resources for mental health (Del Castillo, Del Castillo, & Koenig, 2023; Alibudbud, 2022). The Philippines, with its largest Christian population of 109 million, is deeply rooted in Catholicism. With almost 80% of Filipinos practicing the Roman Catholic faith, the country is the world's third-largest Catholic country. However, religion in the Philippines is not monolithic, with various beliefs including Christian, Islam, Buddhism, and Sikhism. Interreligious dialogues, rooted in the Filipino value of *pakikipagkapwa* (fellowship), contribute to community building and social cohesion. Most Filipinos consider religion essential in their lives, and studies show that it positively impacts mental health, relationships, academic success, and well-being. Some Filipino women use spirituality to interpret events and make decisions (Del Castillo, Del Castillo, & Koenig, 2023).

Objectives of the Study

This case study aims to present the following:

a) describe and discuss life context of Connie that led her this this healing journey,

b) explore and explain the contributions of the religiously-integrated cognitive behavioral therapy in the process of Connie gaining insights and improvements in her mental health status,
c) and make meaningful connections between the experiences of Connie and the psycho-spiritual approach used in this case study.

Relevance of the Study

This study creates relevance in the fields of psychology and theology through the following means:

a) providing points for describing and discussing a person's healing journey,
b) rendering reasons and realities that explore and explain the contributions of the religiously-integrated cognitive behavioral therapy in the process of gaining insights and improvements in one's mental health status,
c) and making meaningful connections between the experiences of struggle and the psycho-spiritual integration.

METHODOLOGY

This is a qualitative single case study; a nonrandom sampling method was done, purposively selecting the single case of Connie (Myers, 2019; Ames, Glenton, & Lewin, 2019). Consequently, the collection and analysis of qualitative data, involves searching for the inductive, exploratory, interview, focus groups, sampling textual or visual content from the Internet, content analysis, thematic analysis, and inductive coding that corresponds to the systematic analysis of Connie's case (Özen & Mittelstädt, 2023). The case study-qualitative methodologies will be enhanced by pertinent literature reviews (Murkin et al., 2022).

Moreover, to establish depth on the insights and reflections of this study, the see-judge-act method shall be utilized. The "see, judge, act" formula, popularized by St. Pope John XXIII, involves examining the situation, evaluating it according to church teachings, and then deciding what actions should be taken, requiring accurate judgment and seeing (Cloutier, 2023). Furthermore, see-judge-act encourages critical-thinking and reflection on social situations, focusing on moral sensibility which engages and incorporates social justice traditions from Scripture, magisterial documents, and related sources (Kawulok, 2020). Thus, from a single case, the case of Connie (not her real name) facts and findings are recorded and reported hereon.

See. Connie is a public-school teacher. She is serving one of barangays near the city. For about almost a decade now she is actively working in the teaching profession. The first five years, she served a private school, and then found a greater employment opportunity with the public schools' system in the country. She has been performing her profession well, able to support her family's needs, and study a master's degree. When the pandemic started, all of these changed.

After two months of isolation due to health protocols, Connie has not been performing her profession well, got fed up with supporting her family's needs, and study a master's degree. Moreover, the Covid19 pandemic gave her more time to think about her past. Thoughts and emotions related to being unvalued, and being abused came alive.

Thoughts and emotions related to being unvalued was rooted in her experience of being left to the care of her grandmother days after she was born because her parents decided to live separate lives. As she was growing up, she was always questioning her value. Self-talking like, "Am I not important, that is why they left me behind?" "Maybe I am not really important. Maybe my birth is the reason why they separated. Maybe I am the cause of their separation." Thoughts of being unvalued became intrusive that she could not focus in doing her work as a teacher, in doing the adjustments demanded by the pandemic to professional teachers—i.e., distant learning. Emotions of sadness deregulated into depression due to the ample amount of time she is spending in thinking that she is unvalued.

Connie knew by then that she needs to take actions related to what she is going through. The first group that she approached were her churchmates. Fellow church goers became her confidants. Listened to her and prayed for her. The church's pastor listened to her, gave advice, and scriptural reflections. By this time, community gathering was highly restricted. Video calls and phone calls were the most reliable means of communication at that moment. This constant sharing gave relief to her during and sometime after the moments of communication. This cycle went on until such time that the government allowed minimal and regulated congregation gathering in churches and other public places. She noticed though that intense thoughts, emotions, and actions were happening before and would resurface sometime after the encounter with churchmates.

The second person she approached was a psychiatrist, through a virtual consultation. The psychiatrist conducted a thirty-minutes online assessment. She was diagnosed with a major depressive disorder. An antidepressant was given to her as medication. With that she diligently took her medicine. She recounted though that once the relaxing and calming effect of the medicine ceases, intrusive thoughts and emotions come back.

The third group that she approached were her workmates. Some of her workmates already knew her life story before the pandemic happened. This group became her confidant. When public school teachers were asked to return to school and prepare for distance learning strategies, they also noticed that Connie was not performing well, like she was doing before. There were even incidents in school that Connie broke down in tears. At times she was observed to be in total silence for the whole day. Her workmates got worried. One of them, had a background in guidance and counseling, encouraged her to see licensed counselor. That workmate introduced her to the author of this paper, a

practicing licensed counselor in the city of Kabankalan. This introduction led to the development of a year and two months counseling process.

Judge/Discern. In the counseling process using the Religiously-Integrated Cognitive Behavioral Therapy, there are four essential documents: (1) Counseling Relationship Form, (2) Direction and Objectives Form, (3) Interventions and Progress Form, and (4) Relationship Termination Form. These documents record and report her metanoia, healing journey.

The Counseling Relationship Form contains three major parts. First, the agreement of pursuing the client's formation and growth as a human person. Second, the presentation and acknowledgement of the clients that they are receiving a professional practice that is regulated and delivered through a licensed counseling professional. Third, this form secures the agreement and commitment of the counselor and the counselee in the counseling process by affixing their respective signature.

Connie and the counselor affixed their signatures and started with the counseling process by determining the direction and objections.

The Direction and Objectives Form records the main goal or direction of the counseling process as discerned by the counselee, and agreed upon by the counselor. The main goal is something that the counselee wants to achieve as an end result of this counseling process. While the objectives are the initial steps or the initiated steps taken by the counselee to reach the main goal.

The counselee noted that she wanted to achieve peace in her life, that is what she has written on the section for the main goal. The steps that she has taken so far involved (a) seeking refuge to her church community, (b) seeking assistance from a psychiatrist, and (c) seeking support from her workmates, her friends.

The Interventions and Progress Form has three major parts: (1) the objectives anchored on the experience of the counselee, (2) the interventions explained and recommended by the counselor that aims to assist counselees in addressing, adjusting, or achieving their objectives, and (3) the progress as reported by the counselee and verified by the counselor as accomplished, partially accomplished, or not accomplished.

During the fourteen months counseling process there were a total of seven major issues-interventions-insights that can be drawn from the Interventions and Progress Forms of Connie. But for the purpose of this case study, we shall only use two.

The first one is on Connie's reality of being a child of parents who decided to live separate lives. Connie felt hurt because of this reality. Ever since she because conscious of this reality she also started to question her worth. (1) As part of the counselee's objectives anchored on this experience, the peace that she seeks as her main goal, may find its manifestation later on once she resolves her thoughts, feelings, and behaviors

related to this parents' separation reality. (2) It was explained to Connie that in order to resolve her thoughts, feelings, and behaviors attached to her parents' separation reality, there is a need to explore and explain her interpretations of this reality. It was found out that Connie associated the experience with the thoughts being unworthy, the feelings of sadness, and the actions of being aloof, untrusting, and unappreciative. Cognitive reframing was used as an intervention. It is also known as cognitive restructuring, is a method that replaces negative thoughts with more realistic, helpful ones. (Rogers, 2021). After addressing and adjusting her thoughts about the said reality, the counselee was able to achieve her goal. This adjustment was epitomized by her realization that she was looking for love, worth, and being accepted from people who were not there, but love, worth, and being accepted were always given to her by no less than her grandmother. *Lola* has always been there. Fed her, and took care of her daily needs. Hugged her and kissed her. Stayed beside her, guided, and supported her up until fourth year high school. (3) *Ara gali si Lola. Ara gid siya gali.* This realization of her grandmother's loving presence reported by the counselee is verified. The intervention accomplished the aim and led the counselee to progress.

The second one is on how Connie shall manage attacks of sadness (this is how she calls the experience). Friends and co-workers would notice that she exhibits slowing down in her physical and mental functions at school. She would event attest that at the moments of attack she would loss of focus and loss of motivation to do something. Psychomotor retardation and loss of energy can be observed (APA, 2022). When feelings of worthlessness and inappropriate guilt visits her ability to think and concentrate diminishes because of these thoughts of death arise. Hurting oneself and suicidal ideation happened to Connie. (1) She wanted to help herself. Connie knew that something needs to be done, so that she may not worsen the situation. There is more to life than just being succumbed to depression because of the uncontrollable realities of life. She felt inside her and understood that she can do better. Her faith and hope say so. But she does not know how to concretely do it, so to speak. (2) Mindfulness-based interventions, such as meditation, and walking, can help reduce depression (Liu et al., 2023). Several sessions were dedicated to practice mindfulness exercises, such as mindfulness breathing and mindfulness walking, until such time she was ready to used them in real life scenarios. Mindfulness breathing strategies enhance cognitive functioning, reduce stress, and improve classroom behavior in teachers (Hall, 2023). This technique was also used by outside of the classroom, at her boarding house, or in any place where she would feel the trigger of the attack. In one instance, Connie recounted that she was able to assist a student who suddenly screamed and cried while attending a limited face-to-face class. She thought the student the breathing technique that helped her as well. The counselee was happy to recall that experience, and retell how she benefited from that technique as well. (3) She emphasized that, *"Kaya ko gali magkasubo pero wala ginasakit akon kaugalingon."* (It is now possible for me to feel sadness without hurting myself.)

In her progress report, the counselee was encouraged to continue with her faith practices of praying and attending church services, while reaping the benefits of practicing the interventions recommended to her during the counseling sessions. It is also noted

that, she would bring in scripture readings and insights at various moments of the sessions. Her prayers have been constantly noticed as the core of her quest for peace. Prayer, a personal communication with God, has been linked to improved mental health among Christians, easing anger, sustaining love, multiplying joy, and granting forgiveness (Del Castillo, Del Castillo, & Koenig, 2023). At the first instance of raising the desire to seek professional help through counseling, through prayers she had courage and took the essential steps for her healing journey. This same faithful counselee remained steadfast in the counseling process, and claimed her progress one session at a time. On the fourteenth month she was able to claim her desired goal, peace.

The last document is the Relationship Termination Form. The counselee and counselor both agreed that the time has come to terminate the counseling relationship. The resolve was not based on any false hope, such that there will be no problems, issues, or relapse that will happen to the counselee. Instead, the resolve was grounded on (1) the new skillset of the counselee to manage better her thoughts, feelings, and actions, (2) healthy practices through mindfulness exercises and interventions, and (3) insights drawn from cognitive reframing activities that led her to value her worth, forgive her parents, and inspire resilience for herself, to all those dear to her, and those who she professionally serves as a teacher. A study found spirituality positively impacts mental health, but differed in scope and roles (He & Petrakis, 2023). In this case of Connie, spirituality led her to this counseling process and sustained her up to this very moment of termination. *"Mas kusog ang akon paminsaron, kumpara sa bulong."* (My thoughts are stronger that the medication.) This conviction sums up the counseling process.

Metanoia is the spiritual process involving existential transformation of being Christ-like in intellect, will, and human action (Sonea, 2023). Connie act of being able to convert from her depression is a concrete manifestation of metanoia. The head, heart, and hands of Connie, so to speak, were able to move from the illness side of the spectrum to the wellness side of it.

Act. Religions offer a comprehensive understanding of self and the world, reducing isolation and loneliness, and through symbolic teachings and prayers, individuals cope with personal challenges (Leira, 2023). This context is the foundation of Connie's quest for healing—the quest for peace, the quest for converting her lifestyle into a lifestyle makes her experience peace. Managing depression, gaining a better life narrative, and having effective mindfulness skillsets paved the way for Connie to experience healing, experience peace, the peace she desired.

Healing is a holistic process involving patients forming a deep relationship with themselves and therapists, aiming for balance in physical and non-physical dimensions, and implementing desired developmental changes (Sadat-Hoseini et al., 2023; Stevens, 2019). In Connie's case, she was able to achieve her counseling goal, and that was made possible because she was open to the counseling process, had a good prior spiritual foundation, and had established good rapport and a therapeutic relationship with her counselor.

The following realities became essential to Connie's healing journey: (a) faith formation and foundation, (b) love and belonging felt from her grandmother, churchmates, workmates, and friends, and (c) access to mental health professionals, i.e., psychiatrist (online), and counselor/psychologist (in-person).

Mental health issues in the Philippines, including anxiety and depression, are a significant challenge, requiring non-health sectors like education, church, and social welfare to promote overall well-being (Del Castillo, Del Castillo, & Koenig, 2023). The availability of faith and mental health structures are essential in the holistic intervention and prevention approach to mental health issues and disorders (Pečečnik & Gostečnik, 2022).

Hence, it is highly recommended that (a) churches, schools, and homes become venues for faith formation and foundation. (b) Also, each person deserves to experience love and belonging from family members, churchmates, workmates, and friends. (c) Lastly, access to professionals and persons who can adequately provide interventions aiding people in their biological, psychological, social, and spiritual needs (Madhani et al., 2023).

Acknowledging what are available at the moment in churches, schools, and homes confirms that we are not starting from scratch on the intervention level. Noteworthy to say as well is the calling for the improvement on the possible prevention, intervention, and postvention programs and services that could transpire out of these discoveries found on this case study.

RESULTS AND DISCUSSION

Connie, a Filipino professional teacher, faced devastating life events during the COVID-19 pandemic, highlighting the mental health impacts on Filipinos (Del Castillo, Del Castillo, & Koenig, 2023; Alibudbud, 2022). The strict quarantine regulations forced families to isolate, religious festivals to be abandoned, and schools closed. Connie missed church activities and personal contact, feeling isolated and drained of memories and realities. This case study aimed to explore and explain Connie's metanoia over depression through the aid of Religiously-integrated Cognitive Behavioral Therapy (Degillo & Gayoles, 2020).

During the COVID-19 pandemic, Connie experienced fear, depression, anxiety, social isolation, and stigma. She was diagnosed with Major Depressive Disorder and received medication, which helped her relax and sleep. SSRIs, a first-line treatment, increased serotonin levels in the brain, but Connie's thoughts of painful memories and extreme sadness returned once the medication's effects decreased (Schreiber, 2023).

Connie sought help from her churchmates and pastor, who were viewed as a supplementary therapeutic opportunity. Despite providing weekly inspirational verses and prayers, they futile in addressing her current cares and concerns. Connie continued to experience low mood and intrusive thoughts until major COVID-19 restrictions were lifted.

Connie, despite seeking help from psychiatrists, pastors, and parishioners, still felt unwell. Her confidant encouraged her to seek in-person counseling and psychotherapy. A licensed counselor met her, and the study aims to record and report the interventions she received.

The intervention given to the client was based on the principles and practices of Religiously-Integrated Cognitive Behavioral Therapy counseling process involves four essential documents: Counseling Relationship Form, Direction and Objectives Form, Interventions and Progress Form, and Relationship Termination Form. The Counseling Relationship Form outlines the client's metanoia journey, acknowledges professional practice, and secures commitment between counselor and counselee through signatures.

The Counseling Relationship Form outlines the client's commitment to personal growth, acknowledgement of professional counseling practice by a licensed professional, and their respective signatures, which are crucial for the counseling process, including determining direction and objections.

The Direction and Objectives Form outlines the main goal of a counseling process, determined by the counselee and agreed upon by the counselor. The objectives are the initial steps taken to achieve the main goal, such as seeking refuge to her church community, assistance from a psychiatrist, and support from workmates and friends.

The Interventions and Progress Form consists of three main parts: objectives based on counselee's experience, counselor-recommended interventions, and progress reported by counselee and counselor. This case study focuses on two of the seven major issues, interventions, and insights from Connie's 14-month counseling process, based on her Interventions and Progress Forms.

The main focus was on Connie's separation from her parents, which led to feelings of hurt and self-questioning. The counselee aimed to find peace by resolving her thoughts, feelings, and behaviors related to this reality. Cognitive reframing was used as an intervention to replace negative thoughts with more realistic ones (Rogers, 2021). Connie realized that she was seeking love, worth, and acceptance from her grandmother, who provided her with love, support, and guidance. This realization led to progress and the realization of her grandmother's loving presence.

Connie struggles with depression, causing slowing down in her physical and mental functions at school. She experiences loss of focus, motivation, and psychomotor retardation. Feeling worthless and guilt, she loses her ability to think and concentrate. This leads to hurting herself and suicidal ideation. Connie seeks help and believes she

can do better. Mindfulness-based interventions, such as meditation and walking, can help reduce depression (Liu et al., 2023). Connie practices mindfulness exercises, such as mindfulness breathing and walking, to enhance cognitive functioning, reduce stress, and improve classroom behavior.

The counselee's progress report highlights her faith practices, including prayer and church attendance, and the interventions recommended during counseling sessions. She incorporates scripture readings and insights into her sessions, focusing on prayer as a core for her quest for peace. Through prayer, she gained courage and progressed, eventually achieving her desired goal of peace in the fourteenth month.

The counselor and counselee have decided to terminate their counseling relationship, based on the counselee's new skills, healthy practices, and cognitive reframing activities (Rogers, 2021). The counselor values her worth, forgives her parents, and inspires resilience. Connie's spirituality has led her to this counseling process and sustained her through the termination, as her thoughts are stronger than medication.

Metanoia is a spiritual process involving existential transformation, as demonstrated by Connie's conversion from depression, moving her body and mind from illness to wellness.

Religions provide a holistic understanding of self and the world, reducing isolation and loneliness. Connie's quest for healing, based on managing depression, improving life narrative, and mindfulness skills, led to her desired peace. Healing involves forming a deep relationship with therapists, aiming for balance, and implementing developmental changes. Connie's success was made possible by her openness, prior spiritual foundation, and therapeutic relationship.

Connie's healing journey was facilitated by faith formation, love and belonging from her family, and access to mental health professionals, both online and in-person.

Mental health issues in the Philippines, such as anxiety and depression, require non-health sectors like education, church, and social welfare to promote overall well-being (Del Castillo, Del Castillo, & Koenig, 2023; Alibudbud, 2022; Lally, Samaniego, & Tully, 2019). Faith and mental health structures are essential for holistic intervention and prevention, with churches, schools, homes, and professionals providing necessary interventions.

Scriptural Insights. Healing is a common theme in the Sacred Scriptures. In relation to the experience of Connie, there are three Gospel stories that could shed insights and inspirations to the readers of this case study. They are as follows: (1) Healing of the Crippled Woman (Luke 13:10-13), (2) Healing the Sick in Gennesaret (Mark 6:53-56), and (3) Healing of Simon’s Mother-in-Law (Luke 4:38-39).

Healing of the Crippled Woman. Jesus was teaching in a synagogue when he saw a woman with a crippled spirit for 18 years. Jesus freed her, and she immediately stood up straight and began praising God (NRSVUE, 2024, Luke 13:10-13).

And just then there appeared a woman with a spirit that had crippled her for eighteen years. She was bent over and was quite unable to stand up straight (Luke 13:11). For eighteen years the crippled woman delt with this reality. Many years of being bent over by this spirit, making her unable to stand straight. This scenario of the crippled woman is very relatable to Connie. Connie delt with the reality of being born to parents who decided to live separate lives. She took this reality in, and was led to a crippling realization, as it were. She thought that she was worthless, that she was the cause of her parents' separation, and that life means less because of this reality. She maximized the negativity of the situation, and ended up listening and prioritizing the promptings of the crippling spirit, so to speak.

The crippled woman appeared on the area where Jesus was, it is such an opportune time. With our any hesitation, Jesus *called her over and said, "Woman, you are set free from your ailment (Luke 13:12)."* The Providence of the Divine abounds! Amidst the limitation of healing the woman, as the crowd sees it improper, Jesus willed that there and then the woman be set free from that which cripples her. In comparison to Connie's scenario, the pandemic was somehow a life-changing event that nobody expected to happen and have such drastic effects. But it happened. Due to the pandemic, Connie had an ample time to be off her daily routines that made her somewhat forget her past and crippling thoughts, emotions, and behaviors. This disruption led her to navigate once more to the dark pages of her past. The Providence of the Divine abounds! Amidst the seeming turmoil that Connie experienced, these experiences opened the door for a new form of intervention that led her to healing. An opportune time, which introduced her and sustained her in pursuing freedom from that which cripples her, and pursue better self-management, better narration of her past, and peace in life.

When he laid his hands on her, immediately she stood up straight and began praising God (Luke 13:13). Healed by Jesus, the once crippled woman stood up straight and went about praising God, proclaiming the Good News. She became a testimony of Jesus' goodness, the experience of being healed by God. In my professional practice, Connie is a concrete testimony of a healing experience through a psycho-spiritual intervention. All glory and praise belong to God, who made this healing journey possible for Connie, and for all those clients have benefited and will benefit from this psycho-spiritual intervention known as Religiously-integrated Cognitive Behavioral Therapy.

Healing the Sick in Gennesaret. After crossing the river, they landed at Gennesaret and moored their boat. People recognized them and brought sick people to their villages, cities, or farms. They asked for the fringe of their cloak to be touched, and all healed (NRSVUE, 2024, Mark 6:53-56).

When they had crossed over, they came to land at Gennesaret and moored the boat. When they got out of the boat, people at once recognized him (Mark 6: 53-54). The people knew that Jesus and his disciples heal. His words and works are becoming renowned. Preaching the Gospel and healing the sick became the groups' identity, so when people knew where they are a multitude of crowd gathers. Connie also knew. She had faith and hope in Jesus. Since her grandmother introduced faith, love, and hope to her, she knew that Jesus is her refuge, especially in times of life's difficulties and disasters. She maintained the composure of faith and hope as she sought assistance from her churchmates and pastor. She carried faith and hope in her heart as she sought the assistance of a psychiatrist, and took her medication. She sustained her faith and hope as she ventured through counseling, desired and developed healthy coping mechanisms, thoughts, feelings, and actions, and eventually attained the peace she aimed for.

Instrumental to her healing process, as well, are her collogues at work, especially the one who suggested to her that she needs to see a licensed counselor, so as to provide an in-person assistance. This experience of care and concern was also experienced by those *sick on the mats* who were *rushed and brought to Jesus wherever they heard he was (Mark 6:55).* The people who genuinely care for us, who find ways, extend their means, and assist us in finding the peace and healing we are longing for. Connie was blessed to have colleagues, turned friends, genuinely cares for her—people who would go an extra mile, *pray with us and beg for us*, so to speak, in order for us to experience peace and healing (Mark 6:56).

Healing of Simon's Mother-in-Law. After leaving the synagogue, he entered Simon's house, where his mother-in-law was suffering from a high fever. He rebuked her, and she woke up and began serving (NRSVUE, 2024, Luke 4:38-39).

After leaving the synagogue he entered Simon's house. Now Simon's mother-in-law was suffering from a high fever, and they asked him about her (Luke 4:38). Simon was clear with what he is praying for, the healing of his mother-in-law. Connie was clear as well, she wanted to do better and be able to attain peace. The prayer for doing better came about in the form of better narratives of the past, healthy coping strategies, and better self-care techniques. Peace came about once she was able to acknowledge love from her grandmother through awareness, love for herself through self-care, and love for those who hurt her through forgiveness and kindness.

Then he stood over her and rebuked the fever, and it left her. Immediately she got up and began to serve them (Luke 4:39). Jesus heals. In response to Jesus' goodness, Simon's mother-in-law was moved to service. In gratitude, she got up and began to serve them. In the story of Connie, she had been an instrument for the healing of herself, for parents, for her family, and for those whom she serves as a professional teacher. Being able to experience healing, Connie through the process of counseling have dedicated six months of connecting and reconciling with both of her parents. She was also able to reconnect to her siblings from both sides. Questions, thoughts, and emotions that she has kept for the longest time has been delivered in ways better than she could ever

imagine. Her resolve for peace, paved the way for other members of the family to quest for peace as well. Furthermore, Connie became an instrument for her students to quest for their own healing journey as well. She would teach them ways and means to manage their lives better by care for themselves and practice healthy coping strategies. In gratitude, Connie too got up and began to serve those dear to her and those who are entrusted under her care.

Promoting the Gospel Values. Connie was healed. The pandemic led her to seek healing through Religiously-integrated Cognitive Behavioral Therapy. Connie's healing journey was influenced by her faith in Jesus, seeking help from churchmates, pastors, psychiatrists, and medication. The journey involved praying and practicing healthier means for her to experience peace. Her healing journey has been a testament to the power of faith, love, and compassion. Through counseling, she reconciled with her family and herself, and her resolve for peace has inspired others.

This case study is a testimony to the Gospel values of faith, hope, and love through the healing experience of Connie. Faith has been the foundation for Connie's experience of healing to happen. The faith she mustered and manifested through difficult and developing moments became an apt and ample resource for her for love and peace. Love in the experience of Connie might have a seeming absence due to her life's context, but it motivated her to do better in life. The hope of attaining peace, accompanied her in the quest for healing. With God's grace, her participation to the counseling process, and with essential people, metanoia became possible.

Conclusions

The case study of Connie, showcased a Filipino professional teacher who experienced severe mental health impacts during the COVID-19 pandemic. She was diagnosed with Major Depressive Disorder and received medication, but her thoughts of painful memories and extreme sadness returned. Despite seeking help from her churchmates and pastor, Connie continued to feel unwell. Her confidant encouraged her to seek in-person counseling and psychotherapy.

The Religiously-Integrated Cognitive Behavioral Therapy was used as a psycho-spiritual intervention for Connie. This counseling process involved four essential documents: Counseling Relationship Form, Direction and Objectives Form, Interventions and Progress Form, and Relationship Termination Form. The counseling process focused on Connie's separation from her parents, leading to feelings of hurt and self-questioning. Cognitive reframing was used as an intervention to replace negative thoughts with more realistic ones. Connie also sought love, worth, and acceptance from her grandmother, who provided her with love, support, and guidance.

In Connie's struggled with depression, mindfulness exercises became effective in responding to her acts of slowing down in her physical and mental functions at school. Mindfulness-based interventions, such as meditation and walking, were used to reduce

depression. Connie's progress report highlighted the therapeutic effects that benefited her through the therapy practices and interventions combined with her faith practices, including prayer and church attendance.

Connie's healing journey was facilitated by faith formation, quest for love and belongingness, and access to mental health professionals. Mental health issues in the Philippines require the integration of health and non-health sectors like education, church, and social welfare to promote overall well-being. Churches, schools, and homes should serve as faith formation venues, provide love and belonging to individuals, and offer access to professionals for interventions addressing biological, psychological, social, and spiritual needs.

Recommendations

It is recommended that churches, schools, and homes serve as faith formation venues, provide love and belonging to individuals, and offer access to professionals for interventions addressing biological, psychological, social, and spiritual needs (Aziz, Raines, & Wuensch, 2023; Tan, 2023; Madhani et al., 2023). The case study highlights the need for enhancement of prevention, intervention, and postvention programs and services based on the findings.

The study found that Connie's healing journey was significantly influenced by faith formation, family support, and access to mental health professionals, resulting in the effectiveness of RCBT.

Compliance with Ethical Standards

The participant was once a counseling client of the researcher. During the orientation about the counseling service that she intends to receive, it was explained to her that the counselor shall use RCBT as basis for principles and practices in counseling. She was also informed that the counseling center is also into research and development, hence her data, without disclosing her name, will be kept confidential but will be available for research so as to contribute in the advancement of the counseling profession and practice in the country. She committed to the counseling process by affixing her signature to the informed consent and the counseling relationship form.

No conflict of interest exists in the conduct of the study. The researchers have reviewed the study and guarantee that plagiarism was firmly avoided. Moreover, due credit is given to Pearce et al for RCBT. The intervention used in the counseling process and in this study is heavily anchored on the principles and practices of RCBT. Connie benefited from RCBT by pursuing this therapeutic method that used religious beliefs and practices to help individuals develop thoughts and behaviors that reduce depression, and manage their lives better.

Results are purely for research use only.

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CORDEREAN ANALYSIS ON THE ACADEMIC REQUIREMENTS OF THE PRE-SERVICE TEACHERS IN A STATE UNIVERSITY: BASIS FOR LANGUAGE CURRICULUM ENHANCEMENT

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ABSTRACT

The study structurally analyzed the written academic requirements of the Pre-service teachers enrolled at Cagayan State University. The main instruments were the submitted essays, paragraphs, lesson plans, and written exams. The written outputs of the respondents served as the study's instruments. The evident errors committed by the groups enrolled at the university were classified according to the error types. It was found that the university students have committed numerous errors such as the absence of transitional words, punctuation errors, redundancy, incorrect prepositions used, wrong use of words, run-on sentences, misplaced modifiers, word order, errors on subject-verb agreement, noun antecedent error, etc. The results implied that the respondents need a stronger foundation in grammar. They have not mastered the target language's grammar usage, functions, and rules. This study has pedagogical implications for language teaching and learning. Language professors should incorporate correct grammar usage in all English lessons. There should be more writing tasks or activities given to language learners to enhance their writing skills, especially in Next Normal Education, where students attend face-to-face classes. Furthermore, English language proficiency subjects should be improved along with written communication, and the BEED English courses should be enriched, for these subjects will significantly help the groups refine written communication. Further, the students will be trained to improve their writing prowess before their practice teaching. Moreover, this will help English as a Foreign Language teachers reduce students' writing problems where the English language is directly used. Significantly, this will serve as a vehicle for a more unified teacher-student relationship since the participants have established trust in improving their written outputs.

Keywords: *Language Enhancement, Structural Analysis, Pre-Service Teachers and Written Communication*

INTRODUCTION

Academic writing in Higher Education Institutions is vital because it enables students to ask questions, clarify concepts, and express their thoughts and feelings. It also helps them to develop their critical thinking abilities and find connections.

Students in the university are expected to be good writers, proficient English users, and communicative competent since the students have already completed three English courses during their first- and second-year levels, such as English Language Proficiency 1 and 2, and had completed basic English subjects during their senior high school years, such as Grammar 1 and 2, Writing in the Discipline, Study, and Thinking skills, etc. In addition, the written outputs from third-year college students are expected to be structurally correct as part of the academic requirements in higher education institutions because those English subjects mentioned have a lot of writing drills and research activities where the writing prowess of the students is enriched and enhanced.

Sadly, the checked essays, paragraphs, lesson plans, etc., frequently contain grammatical errors, such as the absence of transitional words, mistakes in punctuation, redundancy, incorrect use of prepositions, incorrect word choice, run-on sentences, misplaced modifiers, errors in word order, errors in subject-verb agreement, errors in noun antecedents, sentence fragments, omissions of commas after introductory elements, misplaced modifiers. During the informal interview, the respondents stated that their writing skills were not fully enriched due to the pandemic's limited training and learning time. Hence, in this Next Normal Education, students could hardly produce refined and free from errors in written outputs.

This predominant circumstance prompted the researchers to analyze the pre-service teachers' written outputs structurally during the Next Normal Education. The results will serve as input for enhancing the Bachelor of Elementary Education (BEED) and Bachelor of Early Childhood Education (BECED) English subjects in higher education institutions.

This study is based on the Time-on-task Theory established by Corder as a model for teaching English language learners (ELLs), particularly in the BEED Department, emphasizing the contribution of linguistic elements to explaining ELLs' varying levels of accomplishment. (Calanoga, 2019). As mentioned earlier, the idea is applied in this study since the researchers additionally focused on the respondents' current or prevailing writing proficiency status, notably in composition.

The best place to start is by describing the kinds of mistakes that language learners make, as this enables language professors at institutions like Cagayan State University to pinpoint the source of the issue. Linguists have long attempted to do this. As Corder (1967) states, errors occur when the learner modifies the surface structure systematically. So, the error, regardless of its shape or nature, causes them to create the target language.

According to Corder (1967), errors can be divided into two groups. These mistakes are both intralingual and interlingual. These two components speak, respectively, of the

detrimental effects of both the native language of the speaker and the target language itself. The interference of the first language (also known as interference, linguistic interference, or crosslinguistic influence) causes interlingual error because the learner tends to apply their first language knowledge to some linguistic features in the target language, frequently resulting in mistakes. While intralingual error is an error that results from a specific abuse of a particular rule of the target language, it is also the exact opposite of interlingual error in that it focuses on the target language, the target language itself.

The results of Corder's (1971) study, which maintained that authors of research publications should systematically convey research information by adhering to specific rhetorical patterns decided by the discourse community, are relevant to the current study. Failure to adhere to the rhetorical pattern and writing quality will likely reduce the likelihood of approval.

While producing a research article is understandably complex, it is even more difficult if one is writing in one's second or third language. Even if a language editor can iron out grammatical mistakes, researchers are on their own regarding the rhetorical presentation of their research ideas.

However, the former paper differs from the present study in terms of the analyzed instrument—the former analyzed research articles, while the present study explored the students' written communications.

Similar to Corder's study (1973), which focused on analyzing grammatical faults when translating English writings into Bahasa Indonesia text, this study is connected to this. The findings of his research revealed that the errors were on:

1. 85,29% of morphological errors in word formation and 14,70% of affixation errors were found.
2. There were syntactic errors in the phrase (3,96%), clause (1.00%), and sentence (95.04%).
3. The factors causing the translation errors are the students' lack of understanding of the context of the source language text, their inability to construct sentences in the target language grammatically, and their lack of grammar knowledge.

He concluded that the respondents needed to correct their grammar when translating morphological and syntactic English texts into Bahasa Indonesia texts.

The study also shares some similarities with Crompton (2011), who claimed that learners make mistakes in understanding and output. He also mentioned how it can be challenging to attribute comprehension failures to a lack of knowledge of a specific grammatical element of a poorly comprehended sentence.

In his investigation, he built on personal and professional experience in a written composition entitled "My Life in Colombia." Based on Clinical Elicitation (CE) research, he conducted an analysis. The respondents made four errors: omissions, additions, disinformation, and disordering.

The above study analyzed errors using the four classifications of mistakes; however, error types, particularly omission, addition, and disordering, were not considered. Thus, this study was conducted to address them. Then, the results of this investigation were used to devise guidelines for enhancing a language curriculum.

Research Questions

The study was conducted to analyze the linguistic errors in the academic output and requirements of students enrolled at Cagayan State University.

Specifically, it sought answers to the following questions:

1. What structural errors are committed in the Literacy Development Class?
2. What structural errors are committed in Teaching Literature in an Elementary grade class?
3. What are the implications of structural errors to Language Curriculum Enhancement based on the results of the study?

METHODOLOGY

This study is a Qualitative one. Specifically, it employed descriptive analysis to evaluate the linguistic errors in students' academic output and requirements. Descriptive analysis was also utilized since the respondents' written communications were explained and analyzed. This study was conducted with the Pre-service teachers, particularly the BEED and BECED third-year students who took Teaching Literature in the Elementary Grades and Literacy Development, who were the study's participants. Purposive sampling was used in choosing the participants considering Total enumeration, which gave 115 respondents. The examination was conducted at Cagayan State University-main campus, Andrews Campus, Tuguegarao City, Cagayan, Philippines- during the first semester of the 2022-2023 school year.

The written outputs of the pre-service teachers, such as essays, paragraphs, and lesson plans, particularly the BEED and BECED third-year students who took Teaching Literature in the Elementary Grades and Literacy Development, were analyzed using error analysis.

Regarding data collection, the students' written outputs were read intensively and classified according to subjects and types of errors. After the checking and analyses, the outputs were returned to the students, and feedback was given virtually and face-to-face. Students also had the chance to rewrite their written outputs by incorporating the researcher's suggestions.

Lastly, the information gathered was divided into categories depending on the types of errors made, and those categories were then examined using the Error Analysis of Dafei (2007), Haggetry, John (2007), and Iyldyz (2007). The study concentrated on structural errors, emphasizing mistakes that are deliberate breaks with the input patterns to which the participants have been exposed.

RESULTS

1. Structural Errors in Literacy Development Class

Table 1. *Structural Errors in Literacy Development Class.*

Sample sentences/phrases	Errors committed	Errors Analysis
For me the most helpful in developing the literacy of	Incomplete sentences Lack of parallel structure	The transition of the sentences is vague. It

early learners is the Marungko approach. Because the children will start with each sound of the letter first. And then the short words that fit the sounds and the letters.	missing comma after introductory element	lacks a parallel structure.
As a teacher you need to be prepared for the things you will encounter.	missing comma after introductory element	There is an absence of a comma after the word teacher.
The marungko approach, because it helps students to improve their reading skills through the use of modern Filipino. It's one of a great helper for young learners for them to know the Alphabet.	A comma is used incorrectly.	The sentence is not concise/ not clear (Better to use using instead of through the use)
For me, best approach that is best use on teaching young learners in barrio school are the four -pronged approach Because in this approach teacher will help the student develop their genuine love for reading, critical thinking, mastery of oral language structure, and begining reading.	Absence of article “the” in indicating the superlative degree of adjective missing comma after introductory element misspelled word	Type of Error: Addition The word best is not necessary to be a part of the sentence. No comma is found after the approach, The word beginning is misspelled.
If I am a Pre-school teacher in a barrio, i will seek help for government to have fund that will be use to buy books or other materials that's need in school.	capitalization Tense of the verb error	I must be capitalized. The present form “use” is incorrect. The past form of used is needed in the sentence.
For me, I will be use my creativity, for example, I will make a way like if there is no TV in the room	Error on Subject-verb agreement	The verb is in the future progressive tense; thus, a verb with “ing” like “using” is correct to be used.
It is better to teach children to read tagalog first.	Wrong choice of word.	Wrong choice of word It is better to use Filipino instead of Tagalog when referring to language
Ms. Patrice shall use Distar Approach, because she handle a varied types of learners	A comma is used incorrectly. Subject-verb agreement error	A comma is used, yet it is not necessary. The verb “need” is used instead of the S-form of

		the verb, “handles” since the subject pronoun, “she” is singular in form
…in whole language approach that teacher are expected to provide a literacy	Subject-verb agreement error	The plural linking verb, are, is used instead of “is”
Teacher Fe’s first step to do is to invite her students what they already realize	Wrong tense of a verb	Past form of the verb is not used.
Marungko Approach is the best in teaching young learner's in barrio schools because whenever it is barrio they can teach young learner's the modern Filipino aplhabet with or without the use of any materials.	Plural form of the noun error Wrong spelling	Plural form of the noun is needed not a possessive form. The word alphabet is misspelled.
I think I will seek for help to those who wants to share any amount	Subject-verb agreement error	Since those is used, the verb must be want
I think Ms. Patrice will use will be Four-pronged Approach because her young learners has different types of reading. Ms. Patrice needs to deal with the interest of learner's to pay their attention. She should teach them the way that no one will left behind in reading.	Modal error Auxiliary verb error Subject-verb agreement error Plural form of the noun is needed not a possessive form Absence of be-verb	The modal, will, is used repeatedly. The auxiliary verb “has” is incorrect; rather, have is needed since the subject is teachers. The absence of be-verb is needed. Better:….will be left behind
-For me the four-pronged approach. Because this approach has components where children exhibit for them to learn more. Including their love for reading, developing critical thinking, mastery of oral language structures and etc.	Run on sentence sprawl Vague thought Lack of parallel structure Wrong conjunction used.	The sentences are not written completely. The construction is fragmented
They can also engage different activities that will enhance their critical thinking. Which is they can work as a group or independently. It also help them build or develop their decision	Fragment Misplaced modifier Subject-verb agreement error	The sentences are not written completely. The construction of the sentence is fragmented. Wrong phrasing/ construction of sentences not concise.

making, connection with other young learners.		The verb help is used. It is must be S-form of the verb since the singular subject pronoun “It” is used.
For me the Marungko Approach because it's highlight the mother tongue first, before introducing borrowed letters and words. And it is needed especially in bario schools for those who don't have totally access to the materials that is needed in a one classroom. And this approach is the best which can learn the learners in a barrio school. In addition using this methods the highlight things already familiar to our students will make learning easier for them, and more fun as well.	Contracted word error SVA error Run-on sentence sprawl Wrong plural form of demonstrative pronoun Redundancy Wrong spelling Missing comma after introductory element SVA error	Vague thought The sentences are not coherently written. It lacks parallel structure. Article “a” is used already; so, no need to use “one” The pronoun this is used instead of these.
As a future preschool teacher, I will go to the government and ask a help. To ask a fund it is not for us as a teacher but rather for children. For them to have a better learning, better experience, better materials, resources to access. So that they will not struggling for their studies because of lack of materials	Wrong plural indefinite pronoun used Run on / sentence sprawl Absence of be-verb Wrong punctuation usage	Help is a mass noun; thus, some must be used and not “a” Sentences are not coherently written. It lacks transitional devices.
Having time management, and self-conditioning. Amidst the challenges they experienced, teacher Fe must aware of the technology surrounding them, that her pupils has a poor or limited materials for reading and etc.	Subject-verb agreement error Run-on sentence sentence sprawl Absence of be-verb Subject-verb agreement error conjunction is incorrectly used. Wrong punctuation usage	-Sentences are not coherently written. -It lacks transitional devices. -The auxiliary *have* must be used instead of has -Absence of be-verb after the phrase --“Teacher Fe must be aware” -Omit conjunction “and” before etc.
To make her teaching-	Subject-verb agreement	The first letter of the word

learning useful and enjoyable, She must already surfed on the web and downloaded educational videos. She must organiz and plan how much a she spends on specific activities which is very important.	error Run-on Lack of parallel structure Wrong spelling Article is incorrectly used. Preposition error SVA error	She is capitalized. Preposition “on” is added, it must be omitted instead. Linking verb “is” is used; it contradicts the number of the subject, activities *Type of Error:* Disorder

Table 1 shows the sample sentences and paragraphs of the respondents. Likewise, it shows the structural errors committed by the third-year students who are taking Bachelor of Early Childhood Education and finished Literacy Development subject. The respondents answered four questions related to approaches to teaching Literacy Development. The students were given three (3) days to complete their written tasks to finalize and proofread their written outputs. Expectedly, their answers must be free from grammatical lapses since they had sufficient time to do so. However, it was found that their written outputs have errors.

As seen in Table 1, the sentences are not entirely written; their construction is fragmented. Students also needed to correct phrasing or structure sentences concisely.

Similarly, some of the paragraphs in the table have vague thoughts, and the organization of sentences is not well-organized. In addition, the sentences are not coherently written, lack parallel structure, lack transitional devices, and have tense of verb errors.

2. Structural Errors in Teaching Literature in Elementary Grade Class

Table 2. *Structural Errors in Teaching Literature in the Elementary Grades Classes.*

Sample sentences/phrases	**Errors committed**	**Error analysis**
I. Objectives: At the end of the lesson, the pupils should be able to:	Wrong modal used	The modal *will* is appropriate instead of should
I. Preliminaries “Have you pray?”	Subject-verb agreement error	The verb used is not in the past participle form, yet the sentence talked of the perfect tense.
“before you seat please pick up the pieces of paper under your chair”	Capitalization error Wrong choice of word	Sit must be used instead of a seat
“before we proceed to our lessons for today the day, I will check your attendance first”	not concise (use of the day)	Using the phrase “the day” made the sentence wrong Classification of Error: Addition
Before we move on (remove) to our next lesson, what did we discussed yesterday?”	Tense of verb error Pronoun used is not fitted	The pronoun “on” may not necessarily needed in the sentence. Classification of Error:

Sample sentences/phrases	Errors committed	Error analysis
II. Presentation Please stand up and we will going to watch a video and try to sing and follow it.	Addition Redundancy Absence of be-verb	The word up must be removed. The verb be is omitted.
Who are your favorite cartoon character?	Subject-verb agreement	The plural form of the verb (are) is used, yet the noun (character) is singular
After that, Who can give me the activities they do all over the moon?	Capitalization error Tense of verb error	The first letter of "who" should be in small letter. The verb "did" is needed to indicate past action.
What did you noticed on the pictures	Punctuation error Subject-verb agreement error	The action word "noticed" is used, the sentence needs present base form, notice. Rule: When using do, does, and did, the verb must be in the present base form.
Verbs are words that shows action.	Subject-verb agreement error	Verbs/words are in the plural form; hence, the verb "show" is appropriate
When the two boy finally arrived to the moon, what did they do first?	Plural form of noun error	Plural form of noun is needed
Are they any questions about verbs?	Wrong pronoun	A subject pronoun is used instead of the demonstrative pronoun "there"
Verbs are use to describe an action word Teacher!	Tense of verb error Wrong punctuation	In the sentence, past form "used" is needed.
Create at least 10 sentences that has a verb or action words that you do everyday.	Subject-verb agreement error	Sentences is the referent, thus, the auxiliary verb "have" must be used
What do we call these all words class?	excessive word usage	The word all is added in the sentence. It is better if this is omitted
What lesson did you learned from the short story?	Subject-verb agreement error	The action word "learned" is used; the sentence needs to present base form "learn." Rule: When using do, does, and did, the verb must be in the present base form.
They are Common and Proper Noun Ma'am	Wrong plural form of nouns Absence of a	The thought of the sentence referred to two things (common and proper nouns);

Sample sentences/phrases	Errors committed	Error analysis
	punctuation	thus, nouns must be used.
Discussion:		Correct way:
I have flash cards here and you need to read it and identify its elements.	Noun-pronoun antecedent error	The plural form, flashcards, need plural pronouns flashcards – those- their
What are the characters of the story?	Wrong pronoun used	The interrogative pronoun who is fitted and not what since the thought refers to characters.
D. Generalization		
What are the two kind of nouns we have discussed class?	Error in stating the plural form of a noun	Kinds of a noun is better way
Never think that you can't, instead find more opportunities to become succeed.	Wong abstract noun Wrong choice of word	Succeed is not fitted in the sentence; it is better if it is successful.
Can anyone tell me what does the card says?	Subject-verb agreement error	Does is used in the sentence; hence, say is needed
Does anyone know what a setting of a story is?	Sentence sprawl	The sentence is vague. Better if: Does anyone know the setting of the story?
Very good! But where did the story took place?	Tense of a verb error	The verb take is appropriate because did is used. Rule: The verb must be in the present base form when using do, does, and did.
Activity 1:		Lack of parallel structure
Look at the pictures class, the heart is posted on the board that you must color it. Red if the words are Common nouns; Blue if it's Proper nouns.	Vague instructions Not concise	Better if: Color those hearts red if the words are common nouns and blue if those are proper nouns.
IV. Evaluation		Directions must be used instead of Direction because it refers to instructions.
Direction: In underlined words, identify the statement and write PN if it's a proper noun and CN if it's a common noun in each sentence	Wrong word usage Instructions are not clear.	Better: Write PN if the underlined noun is a proper noun and CN if it is a common noun.
Assignment:	Run-on sentence	Instructions are not vivid.
Find a story you like, list the story's elements	Vague instructions Absence of	Transitional words should be coherently used.

Sample sentences/phrases	Errors committed	Error analysis
(characters, setting, theme, and plot), and then in a four sentence paragraph describe what you like and why you like it.	Transitional words Plural form of a noun error	*Type of Error: Disorderliness*

As Table 2 shows, the sentences and statements of the students in their lesson plans in teaching literature class showed various structural errors. The table shows the crafted objectives were erroneous because the models used were inappropriate. Similarly, in the preliminaries and presentation part of the lesson plan, the pre-service students committed tense of verb and subject-verb agreement errors. Moreover, the lesson plan's discussion, application, evaluation, and assignment errors were in run sentences, sentence sprawl, vague instructions, and subject-verb agreement.

In connection, the third-year Bachelor of Elementary Education students who finished Teaching Literature in the Elementary Grades were tasked with making lesson plans in English for any grade level. The submitted outputs were checked and resent to the pre-service teachers so they could incorporate the corrections and suggestions. The respondents were given chances to rewrite and re-edit their outputs after revisions.

3. Implication of Structural Errors to Language Curriculum Enhancement Based on the Results of the Study

Finally, this study sought to answer the third question: What are the implications of structural Errors for language curriculum enhancement?

After analyzing Structural Errors in Literacy Development Classes and Teaching Literature in Elementary Grades Classes, the study inferred that structure errors affect each sentence's message. The results show that errors also affect the coherence of messages presented in a paragraph. In many other instances, effective language structures play a pivotal role in promoting the readability and clarity of messages. The results implied that the respondents have a weak foundation in grammar. They have not mastered the target language's grammar usage, functions, and rules. This study has pedagogical implications for language teaching and learning. Language professors should try to incorporate correct grammar usage in all English lessons and curricula. There should be more writing tasks or activities given to language learners to enhance their writing skills, especially in Next Normal Education, where students attend face-to-face classes. Furthermore, English language proficiency subjects should be improved along with written communication, and the BEED English courses should be enriched, for these subjects will significantly help the groups refine written communication. The students will be trained to improve their writing prowess before their practice teaching. This study will help English as a Foreign Language teachers reduce students' writing problems where the English language is directly used. Significantly, this will serve as a vehicle for a more unified teacher-student relationship since the participants have established trust in improving their written outputs.

DISCUSSION

Structural Errors in Literacy Development Class

There are numerous errors committed by third-year college students in their constructed sentences and paragraphs, such as subject-verb agreement errors, modal errors, auxiliary verb errors, the plural form of the noun is needed, not a possessive form absence of be-verb, run on, sentence sprawl, vague thought, lack of parallel structure, wrong conjunction used, fragment, misplaced modifier, contracted word error, the incorrect plural form of the demonstrative pronoun, redundancy, wrong spelling, missing comma after introductory element and wrong choice of word.

In summary, the respondents' apparent and frequent mistakes included a lack of parallel organization, sentence sprawl, fragment, subject-verb agreement problems, run-on phrases, incorrect verb tense, and incorrect word usage. This finding implies that even if the respondents are already in third-year college, they still have not mastered grammar rules. Their writing skills are not yet fully enhanced. This further implies that the students have a weak foundation in terms of grammar usage. Their outputs are not syntactically and structurally bound with the standard for writing essays, paragraphs, and other related written outputs.

During the informal interview with the respondents, which was conducted after analyzing their written outputs, they narrated that they were not fully linguistically and communicatively competent. This can be attributed to the kind of grammar foundation and orientation they had during the Pandemic period. Their poor command of English is attributed to their first language interference in learning the target language. This reality is related to the findings of MacSwan (2017) that the first language interferes with understanding and learning the English language.

Further, this coincides with Malana (2018), Maleki et al. (2007), and Silalahi (2018) as they claim that predominant errors have been repeatedly committed in grammar and mechanics by university students, which alarmed the language teachers.

Structural Errors in Teaching Literature in Elementary Grade Class

There are structural errors committed by the third-year students in their Teaching Literature in the Elementary Grades. The lesson plans analyzed showed that numerous errors were engaged in the different parts of the lesson plans.

The common errors were a lack of parallel structure, subject-verb agreement, run-on sentences, vague instructions, sentence sprawl, verb tense, and wrong word usage.

This result suggests that the student's foundational knowledge of grammatical usage is weak. Their outputs are not syntactically and structurally bound with the standards in composing lesson plans and other associated written outputs.

Further, this implies that the respondents still need more writing training and drills. Although they are already third-year college students, they must still review and perfect the grammatical standards. Their writing skills will be improved before they are deployed to different Elementary schools next year.

The findings were counter-validated through an informal interview with the respondents and a post-conference after their classroom teaching demonstrations. The

respondents revealed that writing lesson plans in straight English is a significant challenge. Producing a refined lesson plan needs time, effort, and training. They also indicated they are not fully linguistically competent due to their limited language exposure and writing training for the past two years. During the Pandemic period, their written skills were fully enhanced or enriched.

These findings conform to Suryani et al.'s (2014) and Tamayo & Catabay (2018) studies. Similarly, the concept of Vasquez (2008) is related to the results that proficiency is a more complex topic than is generally assumed. The validity of proficiency in L2 education is helpful for careful consideration when building the English as an International Language (EIL) competence framework.

Conclusions

Based on this study's findings, it is concluded that pre-service teachers are not proficient writers, even if they studied many English subjects during their senior high school and their first two years of university. Due to their insufficient writing expertise in the English language, they could not produce polished written communications and outputs that adhered to proper structural conventions.

The language learner and professor must be committed to and willing to learn a foreign language. Restructuring and modifying the instructor's point of view and revisiting his or her teaching methodologies and strategies to close and fill the students' gaps in grammar usage, error, and structural analyses are unquestionably vital and relevant instruments in language education. A professor can make better choices that will improve performance and enable them to meet current pedagogical and professional demands when they are aware of the types of errors their students in the university are making and their potential causes.

The textual outputs from this study show us that mistakes or structural analysis serve the goal of teaching the English language. Also, it may alter how much students are aware of their faults. Consequently, they will learn new information and improve their communication skills. By highlighting their mistakes, professors can influence students' cognitive processes and learning changes.

Recommendations

Based on the findings and conclusions drawn, it is recommended that the pre-service teachers in the university must have varied enriching writing activities in English classes to improve their writing prowess.

English instructors should conduct writing remedial classes when necessary. They also need feedback. Instructors must return the checked written outputs to the students so they are aware of their errors in writing paragraphs and essays. This will enrich their writing skills.

In addition, university-wide syllabi should be calibrated to address the needs and concerns of Pre-service teachers regarding writing problems and grammar usage.

The study findings affect language teaching, learning, and language curriculum. The proposed enhanced Purposive Communication, English Language Proficiency, Literacy Development, and Teaching English in Elementary subjects should be

intensified. These courses will greatly aid the student's ability to produce polished written work. Additionally, the Pre-service teachers will be trained to improve their writing competencies. Furthermore, this will help the Pre-service teachers in making refined lesson plans and other related written communication where the English language is straightly used as stipulated in the enhanced Program Intended Learning Outcomes of the Program, which is based on CMO No. 75, s. 2017 that students must possess broad knowledge of language and literature for effective teaching and learning and demonstrate proficiency in oral and written communication for different purposes.

Compliance with Ethical Standards

Before conducting the research, ethical approval was obtained from the university's Research Ethics Board. Written consent forms were provided to all participants. After receiving their consent and assuring them of anonymity and confidentiality, they were asked to submit their written output for analysis with the researchers. The researchers then assured the confidentially of their personal information by not mentioning their names.

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CULTURE-BASED INSTRUCTIONAL MATERIALS IN ARALING PANLIPUNAN – 8 IN THE DISTRICTS OF ATIMONAN, SCHOOLS DIVISION OF QUEZON: BASIS FOR STRENGTHENING THE LOCALIZATION AND INDIGENIZATION OF INSTRUCTIONAL MATERIALS

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ABSTRACT

The study focused on secondary school teachers of Araling Panlipunan 8 from the Atimonan Districts, utilizing purposive sampling to determine the availability and integration of culture-based instructional materials. To assess the availability, the study employed frequency and percentage, while the mean was used to identify gaps in the inventory of available culture-based instructional materials. The findings of this study provide several insights. First, concerning the availability of culture-based instructional materials, traditional materials such as lesson plans were reported to have a 68.75% availability among respondents. However, supplemental reading materials remained insufficient for most teachers. Second, within the category of Graphics and Interactives, physical objects were relatively well supplied, accounting for 43.75% of the available culture-based instructional materials, and dimension of culture elements, particularly values (75%) and language (75%), were highly accessible, reflecting their significant role within the cultural context. Regarding the integration of culture-based instructional materials, traditional materials demonstrated the highest level of culture-based integration, with eight respondents emphasizing tools and technology. Graphics and interactives also effectively integrated in the available culture-based instructional materials, as noted by nine respondents, focusing on tools and technology. Dimension of culture elements, such as clothing, were similarly well-integrated. Furthermore, the study identified notable gaps in the inventory of available culture-based instructional materials, with an overall mean score of 3.052, falling within the 'Agree' range. In conclusion, these

findings indicate that such materials are generally lacking in the surveyed population. Based on these findings, several recommendations are suggested.

Keywords: *Culture-based, Instructional, Materials, Araling Panlipunan, Inventory, Availability, Traditional materials*

INTRODUCTION

Education is key to preparing individuals to contribute to a country's development. Integrating into education and inculcating values, norms, practices, and traditions among students is necessary to preserve a nation's culture. This helps promote good character among the students. A powerful nationalistic spirit may be ingrained in pupils by teaching them the virtues of their local culture. Before teaching-learning, instructional materials should be created with activities that impart local cultural values (Susanti et al., 2021). In culture-based education, culture serves as the cornerstone of the government, sustainable development, and education. Culture is the lens through which abilities, skills, and information about a person and the world are shared. It also provides a technique, guiding principles, assessment, framework, and evaluation. It is a teaching method and educational concept in which the community's distinctive values, norms, cultural beliefs, knowledge, practices, legacy, language, and experiences serve as the foundation for students' learning. Incorporating cultural elements into education may lead to a fresh taste that might increase students' interest in the subject Additionally, this may help students establish a solid link between what they learn in school and how they live. They could also promote a sense of nationalism and patriotism, and a strong sense of community connection. This will result in a positive shift in the country (Knowledge Review, n.d.).

With the dawn of information technology, most of the current contents of learning materials are often highly modernized and trendy, leading to a loss of interest by most students in culturally related content. This causes the deterioration of cultural appreciation by the new generation. Whether teaching elementary or high school students, it is more crucial than ever for instructors to include culturally responsive instruction in the classroom in an increasingly varied and multicultural society. Moreover, the variety among students is growing not only in terms of color and ethnicity but also in terms of economic level, sexual orientation, gender identity, and linguistic background. All students benefited from promoting inclusiveness, raising awareness of intercultural education, and approaching instruction with cultural sensitivity. Increasing intercultural understanding and inclusion promotes acceptance and helps children flourish in a world with increasing diversity, but also helps students with varied origins and needs to be achieved. Cultural awareness may be promoted in the classroom; however, there is also a need to ensure that the lesson plan considers diversity. Alternatively, include cross-cultural allusions and comparisons in the courses and homework to encourage personal connections among students of various origins. Including speakers from different backgrounds is an approach for giving a range of perspectives and real-world contexts to various topics. Depending on the culture in the classroom and the subject being taught, various methods may

promote cultural awareness and diversity in the lesson plan. Regardless of the subject, it would be best to try to relate teaching to current events (Drexel University School of Education, 2000). In doing so, teachers are compelled to use learning materials or even develop one that incorporates these values, beliefs, traditions, and norms as they help students become empathetic, obtain a better grasp of lessons and people, be more open-minded, feel more confident and safer, and be prepared to work in a diverse workspace.

Research Questions

This study aimed to determine the available culture–based instructional materials in Araling Panlipunan 8 in the Districts of Atimonan, Division of Quezon as basis for strengthening the localization and indigenization of instructional materials.

Specifically, this study sought answers to the following subproblems:

1. What are the available culture – based instructional materials in Araling Panlipunan 8 in the Districts of Atimonan, Division of Quezon, in terms of:

    1.1 Traditional materials;
    1.2 Graphics and interactives; and
    1.3 Dimension of culture?

2. What culture were integrated in the following available culture-based instructional materials in terms of:

    2.1 Traditional materials;
    2.2 Graphics and interactives; and
    2.3 Dimension of culture?

3. What gaps were noted in the inventory of available culture-based instructional materials?

4. What interventions could be proposed to strengthen the localization and indigenization of Culture-based instructional materials?

METHODOLOGY

This research aimed to assess the available culture-based instructional materials among Public Secondary Schools, Districts of Atimonan, Schools Division of Quezon, for the School Year 2022-2023. The respondents in this study were the 16 teachers in Araling Panlipunan 8 in Public Schools in the Districts of Atimonan, Quezon.

The research design was descriptive, which required quantitative methods to determine the available culture-based instructional materials.

The data collection locations for this study were the Secondary Public Schools, Districts of Atimonan, Schools Division of Quezon. The study was conducted throughout the School Year 2022 – 2023. It examined Araling Panlipunan 8 culture-based instructional materials, such as textbooks, lesson plans, workbooks, flashcards, supplemental reading materials, graphics, interactive materials, and dimensions of culture.

The Philippines was the locale of the study shown in Figure 3. Specifically, selected Secondary Schools under the Districts of Atimonan in the Division of Quezon are shown in Figure 3. The Atimonan Districts consists of public secondary schools; Atimonan National Comprehensive High School, Balubad National High School, Caridad National High School, Malusak National High School, San Rafael National High School, and Villa Ibaba National High School are from District I. While Maligaya Integrated National High School and Malinao Ilaya Integrated National High School are from District II. The researcher had selected Atimonan, Quezon as the focus of the study, to have the opportunity to make a positive impact on the local educational community. Enlightening people in Atimonan, Quezon about the benefits of using culture-based instructional materials can lead to a more culturally responsive and enriching educational experience for both teachers and students.

This research is based on Culatta's (2016), personalized learning initiative is a model focused on the development of a culture-based instructional material (IM). According to Culatta (2016), utilizing technology in the classroom should go beyond simply transferring print materials into a digital format, such as in reading. This approach does not foster innovative learning. The essence of the Personalized Learning Initiative lies in students using technology to enhance their problem-solving skills and accumulate experiences. It emphasizes that learning occurs when students leverage technology and experiences, known as the Personalized Learning Initiative.

While technology and experience aid in skill acquisition, learning itself is not the ultimate goal. The accumulation of experiences enables students to connect with themselves through their environment, emphasizing the role of culture in the learning process. A theory aligned with Culatta's model is the Functional Context Theory proposed by Sticht (2000). According to this theory, adult learners should possess a thorough understanding of their own culture, drawing on prior and relevant knowledge for more meaningful learning experiences. Embedding culture in a reading text for instructional purposes becomes crucial. This approach ensures that students receive input related to their own culture while simultaneously integrating culture into the context of learning specific language skills.

Research Population and Sample

Atimonan District	Name of Secondary Schools in Atimonan, Quezon	Number of Teachers in Araling Panlipunan 8
1	1. Atimonan National Comprehensive High School	2
1	2. Balubad Integrated National High School	2
1	3. Caridad Ilaya Integrated School	2
1	4. Malusak Integrated National High School	2
1	5. San Rafael National High School	1
1	6. Villa Ibaba Integrated National High School	1
2	7. Maligaya Integrated National High School	2
2	8. Malinao Integrated National High School	4
	Total	**16**

Research Instrument

The self-made survey questionnaire underwent testing for validity and reliability with the assistance of a master teacher, school heads, and research experts. It was administered to ten (10) non-respondents and subsequently tested using Cronbach Alpha. The results were then reported to the research adviser and statistician for further actions.

The data were gathered, organized, and analyzed until a significant conclusion was reached. To facilitate data accumulation and simplify the presentation of statistical figures, the questionnaire was divided into three parts.

Part I focused on the available culture-based instructional materials in Araling Panlipunan 8, including traditional materials, Graphics and Interactive materials, and dimension of culture.

Part II delved into the integration of culture in the available culture-based instructional materials in Araling Panlipunan 8, covering traditional materials, Graphics and Interactive materials, and dimensions of cultures.

Part III address the gaps noted in the available inventory of culture-based instructional materials.

Data Gathering Procedure

The researcher developed the questionnaire based on the sub-problems identified in the preceding chapter. An expert team reviewed and aligned the survey questionnaire's content after its submission. The research questionnaire considered and incorporated the advice and commentary of these experts. It was then given to specialists who assessed the study questionnaire after considering all comments and suggestions. After obtaining

the experts' permission, the self-developed research questionnaire underwent an evaluation for validity and reliability. Before subjecting it to the Cronbach Alpha test, it was administered to ten (10) non-respondents. The statistician received a report of the findings and, if necessary, took further action. The researcher scrutinized whether traditional culture-based instructional materials in Araling Panlipunan 8 were present, as they were the subject of this research.

Furthermore, the researcher sent a letter of request to the Schools Division Superintendents of the eight (8) schools listed in Table 1. The data gathered from the eight secondary public schools were tallied, treated, analyzed, and interpreted according to the problems addressed in this research study. The researcher also reviewed available culture-based instructional materials in Araling Panlipunan 8 to determine the presence of culture-based instructional materials in terms of traditional materials such as textbooks, lesson plans, workbooks, flashcards, and supplemental reading materials. The second objective was to identify graphics and interactive materials, including physical objects, photographs, maps, multimedia, and games. The last objective was to determine the dimensions of culture, encompassing beliefs, norms and customs, symbols and language, social structures, material culture, cultural practices and institutions, and cultural expressions.

Statistical Treatment of Data

The data from the respondents needed to be organized for straightforward analysis and interpretation. The researcher employed statistical techniques, including the calculation of frequency counts, to achieve this goal. In determining the available culture-based instructional materials in Araling Panlipunan 8 in the Districts of Atimonan, Schools Division of Quezon, frequency counts and percentages were utilized. The same method was applied to identify the cultures integrated into the inventory of available culture-based instructional materials. Moreover, frequency counts were employed also to identify gaps in the inventory of available culture-based instructional materials.

RESULTS

This chapter presents the statistical analysis of the data and the corresponding interpretation and discussion of findings. The descriptive design was utilized for gathering the data. The questionnaire served as the main instrument for collecting the data.

Part I. **Available Culture – Based Instructional Materials in Terms of Traditional Resources, Graphics and Interactive Materials and Dimension of Culture.**

Table 1.1 *Frequency Distribution of Available Culture – Based Instructional Materials in terms of Traditional Resources*

Traditional Resources	Available	
	Frequency	Percentage
Textbooks	5	31.25
Lesson Plan	11	68.75
Workbooks	1	6.25
Flashcards	0	0
Supplemental Reading Materials	3	18.75

Table 1.2 *Frequency Distribution of Available Culture – Based Instructional Materials in terms of Graphics and Interactive.*

Graphics and Interactive Materials	Available	
	Frequency	Percentage
Physical Objects	7	43.75
Photographs	5	31.25
Maps	4	25
Multimedia	6	37.5
Games	2	12.5

Table 1.3 *Frequency Distribution of Available Culture-Based Instructional Materials in terms of Dimension of Culture.*

Dimension of Cultures	Available	
	Frequency	Percentage
Values and beliefs	12	75
Norms and customs	9	56.25
Symbols and language	11	68.75
Social structures	12	75
Material culture	11	68.75
Cultural practices and Institutions	9	56.25
Cultural Expressions	9	56.25

Part II. **Cultures Integrated in the Available Inventory of Culture-Based Instructional Materials in terms of Traditional Materials, Graphics and Interactive and Dimension of Cultures**

Table 2.1 *Frequency Distribution of Culture Integrated in the Available Culture-Based Instructional Materials in terms of Traditional Materials.*

Traditional materials	**Availability of Culture-based Integration**			
	Tools and Technology	Clothing	Foods	Means of Transportation
Textbook	3	2	0	1
Lesson Plan	2	0	1	0
Work books	2	2	1	1
Flashcards	1	0	0	0
Total	8	4	2	2

Table 2.2 *Frequency Distribution of Culture-Based Instructional Materials Integrated in terms of Graphics and Interactive.*

Graphics and Interactive Instructional Materials	Availability of Culture-based Integration			
	Tools and Technology	Clothing	Foods	Means of Transportation
Physical Objects	1	2	1	1
Photograph	3	0	0	0
Maps	0	0	1	2
Multi media	3	0	0	0
Games	2	0	0	0
Total	9	2	2	3

Table 2.3 *Frequency Distribution of Culture-Based Instructional Materials Integrated in the Available Culture-Based Instructional Materials in terms of Dimension of Culture.*

Types of Instructional materials	Available Culture-based Integrated in Dimension of Culture						
	Values and beliefs	Norms and Customs	Symbols and Language	Social structure	Material culture	Cultural Practices and Institutions	Cultural Expressions
Lecture	1	0	1	1	0	0	1
Reading	1	1	0	1	0	0	1
Textbook	1	1	1	0	0	0	0
Multimedia	0	0	1	1	0	0	0
Place	0	0	1	1	0	1	0
Total	3	2	4	4	0	1	2

Part III. **Gaps Noted in the Inventory of Available Culture-Based Instructional Materials**

Table 3 *Frequency Distribution of Gaps in the Inventory of Available Culture-Based Instructional Materials.*

Instructional Materials	Number of teachers handling Araling Panlipunan 8 in the Districts of Atimonan	Number of teachers who integrate culture in their instructional materials	Gaps	
			Quantity	Percentage
1. ATraditional Resources				
Textbooks	16	5	11	69%
Lesson Plan	16	11	5	31%
Workbooks	16	1	15	94%
Flashcards	16	0	16	100%
Supplemental Reading Materials (ex. Self - Made RMs)	16	3	13	81%
1. B Graphics and Interactive Materials				
Physical Objects (ex. Local fruits, local farming and fishing tools)	16	7	9	56%
Photographs (ex. Famous sceneries like Bantakay Falls,Pinagbanderahan)	16	5	11	69%
Maps (ex. Political Map of Atimonan and its barangays)	16	4	12	75%
Multimedia (ex. Video and audio presentation exposing Atimonan's people and way of living)	16	6	10	62%

Games (ex. Lampas-tubig and tsichu as played in Atimonan)	16	2	14	88%
Dimension of Culture				
Values and Beliefs	16	12	4	25%
Norms and customs	16	9	7	44%
Symbols language	16	11	5	31%
Social Structures	16	12	4	25%
Material Culture	16	11	5	31%
Cultural practices and Institutions	16	4	12	75%
Cultural Expressions	16	2	14	86%

DISCUSSION

Table 1.1 displays the frequency distribution of available culture-based instructional materials concerning traditional resources. Among the total surveyed, only 31.25% of respondents reported having readily available textbooks. The majority, comprising 68.75%, stated they have access to lesson plans. A small fraction, specifically 6.25% of respondents, mentioned having workbooks. Unfortunately, none of the participants reported access to flashcards, indicating the complete unavailability of this resource for the surveyed population. Approximately 18.75% of respondents reported having supplemental reading materials. It is evident that textbooks, workbooks, and flashcards are largely unavailable resources for the surveyed population. While lesson plans and supplemental reading materials are more available, they still fall short for most teachers in Atimonan, Quezon. Referring to DepEd Order No. 42, S. 2016, which outlines Policy Guidelines on Daily Lesson Preparation for the K to 12 Basic Education Program, these guidelines affirm the role of K to 12 teachers as facilitators of learning. Preparing lessons through the Daily Lesson Log (DLL) or Daily Lesson Preparation (DLP) provides teachers with the opportunity for reflection on what learners need to learn, how learners

learn, and how best to facilitate the learning process. Research shows that effective teachers organize and plan their instruction (Misulis 1997; Stronge 2007). With content and performance standards, and learning competencies firmly articulated in the K to 12 curriculums, it is easier for teachers to carry out both short-term and long-term instructional planning.

Table 1.2 illustrates the frequency distribution of available culture-based instructional materials concerning Graphics and Interactive materials. Physical objects exhibit the highest availability, with a frequency of 7, accounting for 43.75% of the available culture-based instructional materials. This suggests a relatively robust supply of physical objects for Graphics and Interactive materials. On the other hand, games have the lowest availability among the listed types, with only 2 instances, accounting for 12.5% of the available resources. This indicates that games are relatively scarce compared to other instructional materials materials. In summary, physical objects have the highest availability, likely due to the abundance of localized objects in Atimonan, Quezon. They are followed by multimedia, photographs, maps, and games. Conversely, games have the highest frequency of unavailability, possibly because teachers are not familiar with localizing games in Atimonan, Quezon. Some teachers may not be from the locality of Atimonan, Quezon. Rogayan & Dollete (2018) discovered in their study that content is a crucial factor in the validation of instructional materials. The expert validators strongly agreed on the adequacy, appropriateness, and usefulness of the developed workbook, suggesting that more pictorial and graphical images be included to enhance the quality of instructional materials, considering the learning styles of the learners.

Table 1.3 illustrates the frequency distribution of available culture-based instructional materials in terms of Dimension of Cultures. Values exhibit the highest availability among the listed Dimension of Culture elements, with a frequency of 12 and a percentage of 75%. This suggests that most of the culture integrates and upholds these values. Symbols and language closely follow values, with a frequency of 11 and a percentage of 68.75%, indicating that the cultural group embraces a shared language crucial for communication and identity formation. While symbols and place still exert influence within the culture, they may not be as universally embraced as values or language. This implies that values and language play highly central roles in this culture, followed by symbols and place, whereas beliefs and traditions hold a somewhat less prominent position Culturally Responsive Teaching engages students from diverse backgrounds using teaching methodologies that can relate to their cultural heritages and educational experiences. It considers the cultural characteristics, experiences, and perspectives of ethnically and diverse students to ensure effective learning (Wilson, McChesney, & Brown, 2017).

Table 2.1 presents the frequency distribution of culture-based instructional materials Integrated in terms of Traditional Materials. Firstly, it is evident that textbooks have been extensively utilized for discussions on tools and technology, with a count of 3, followed by clothing with 2 responses. However, textbooks were scarcely employed for addressing foods, registering zero instances. This discrepancy may signal an opportunity for educators to enrich textbooks with cultural content related to food to create a more

comprehensive learning experience. Second, lesson plans have been employed 2 times for tools and technology and 1 time for foods, while they were not used for clothing or means of transportation. This suggests that lesson plans may be more aligned with specific cultural topics, and their adaptability across different dimensions could be explored further. Third, workbooks exhibited versatility by being used in all three cultural categories. They were employed 2 times each for tools and technology and clothing, and once for both foods and means of transportation. This versatility makes workbooks a valuable resource for educators aiming for a well-rounded cultural education approach. Lastly, flashcards primarily served as a resource for discussing tools and technology, with 1 response, while they were not used for clothing, foods, or means of transportation. This specialization may indicate that flashcards are most effective when teaching specific cultural aspects, such as technological advancements.

The curriculum set by the Department of Education in the Philippines also served as a guide to the researcher, specifically in crafting some parts of the lessons. Section 5 of RA 10533, known as the "Enhanced Basic Education Curriculum," served as the legal base, stating that the curriculum shall be learner-centered, culturally responsive, and contextualized enough through localized lessons.

Table 2.2 presents the frequency distribution of culture-based instructional materials integrated in terms of graphics and interactive materials.

First, the data reveals that physical objects have been frequently employed for culture integration, particularly in discussions related to clothing, where they were used twice. This suggests that tangible items play a significant role in conveying cultural nuances, making them a valuable resource for educators aiming to foster cultural understanding. Second, photographs were predominantly utilized in the realm of tools and technology, with no instances of their use in the other cultural categories. This indicates a specialized role for photographs in conveying technological cultural aspects, emphasizing their visual impact and potential for engaging learners in technology-related cultural contexts. Third, maps emerged as a significant resource for discussions concerning foods and means of transportation. The map's use in these contexts is likely due to its effectiveness in illustrating Graphics and transportation-related cultural information. Educators can capitalize on this by incorporating more maps when teaching about these cultural dimensions. Fourth, multimedia resources, such as videos and interactive presentations, were employed exclusively for tools and technology, highlighting their potential to enrich culture integration in this area. However, their underutilization in other categories suggests room for educators to explore their broader applicability in conveying cultural content. Lastly, games were primarily used for tools and technology, reinforcing their suitability for engaging students in technology-related cultural topics. In conclusion, Table 5 underscores the importance of diversifying and selecting Graphics and interactive materials thoughtfully when integrating culture into education. Different culturebased instructional materials appear to be more effective in specific cultural categories, highlighting the need for educators to align their choice of resources with their cultural education objectives. Furthermore, the data points to opportunities for enrichment, particularly in utilizing photographs, multimedia, and games

in broader cultural contexts, beyond just tools and technology. This strategic approach to resource selection can enhance the effectiveness of culture integration in education, providing students with a comprehensive understanding of various cultural dimensions.

Table 2.3 presents the frequency distribution of cultural dimensions integrated within various types of instructional materials.

Across the board, values and beliefs are consistently addressed, with all culture-based instructional materials incorporating them to some extent. Norms and customs, though slightly less emphasized, are still present in a significant portion of the materials. Symbols and language feature prominently, indicating a strong focus on communication and representation within cultural contexts. Social structure, too, receives considerable attention across all materials, reflecting an understanding of societal organization and dynamics. Interestingly, material culture appears to be largely overlooked in the provided instructional materials, suggesting a potential gap in addressing tangible aspects of culture such as artifacts and technology. Furthermore, cultural practices and institutions are minimally represented, indicating a potential area for enhancement in terms of understanding and engaging with cultural activities and organizational structures. Cultural expressions, on the other hand, receive moderate coverage, indicating a recognition of the importance of artistic, linguistic, and performative aspects of culture. Overall, this analysis underscores the importance of considering multiple dimensions of culture in instructional materials to ensure comprehensive and inclusive educational experiences that reflect the diversity and richness of human societies. In the sphere of education, Geneva Gay's work on culturally sensitive teaching remains very relevant and important, as highlighted in "Culturally Responsive Teaching: Theory, Research, and Practice" (Teachers College Press, 2010). She emphasizes the importance of acknowledging and valuing the variety of cultural origins that children bring to the classroom, creating a more inclusive and stimulating learning environment by incorporating the cultural references, experiences, and perspectives of students into the curriculum and teaching methods. Examining the subject of commitment in relation to education, "Pedagogy of Commitment: Series in Critical Narrative" (Routledge, 2018), edited by Miguel Gadotti, explores commitment from various perspectives, including its social, political, and ethical aspects. The book, part of the Critical Narrative Series highlighting opposing viewpoints on society and education, argues for education as a transforming process fostering in students a sense of responsibility and involvement, rather than merely the transfer of knowledge.

"Pedagogy of Commitment" discusses how commitment might be developed in educational contexts by drawing on critical pedagogy and other progressive educational perspectives. It covers topics like human rights, democracy, sustainability, and social justice, emphasizing the contribution of education to constructive social change. The book provides educators and policymakers with techniques for implementing a commitment-oriented approach through a blend of theoretical insights and real-world examples. It actively involves students in worthwhile learning experiences, motivating them to become change agents in their communities.

Table 3 presents a frequency distribution of gaps in the inventory of available culture-based instructional materials.

The table provides data on the existing quantity of each type of material, the number of gaps or deficiencies in each category, and the difference between the existing and deficient quantities. Within the Traditional Resources category, it is evident that textbooks and lesson plans exhibit notable gaps, with 11 and 5 shortages, respectively. This signifies a pressing need for an additional 11 textbooks and more lesson plans to meet educational requirements effectively. In contrast, workbooks and flashcards, though still essential, do not appear to be in short supply. Moving on to Graphics and Interactive materials, there are significant gaps in physical objects, photographs, maps, and multimedia resources, with deficiencies ranging from 4 to 7 items. These gaps highlight the necessity to procure or create additional hands-on resources, visual aids maps, and multimedia content to enhance the learning experience. Games, however, seem to be relatively well-stocked, with only 2 gaps. In the Dimension of Culture, a shortage of resources is observed across all subcategories. Values, beliefs and traditions, symbols, language, and place-related materials all display gaps, with values and language being particularly deficient, each lacking 12 resources. These gaps underscore the critical need to develop and provide more culture-based instructional materials in these areas to impart a comprehensive understanding of dimension of culture aspects. It implies deficiencies in various instructional materials categories. Addressing these gaps should be a top priority to ensure a holistic and effective educational experience in Atimonan, Quezon. By prioritizing the creation or acquisition of these culture-based instructional materials, educators and students can benefit from a more enriched and comprehensive learning environment, fostering better understanding and appreciation of the subjects covered. One of the key features of the K-12 Social Studies (Araling Panlipunan) curriculum is the delivery of lessons through localization and contextualization. The principle of localization and contextualization is not new to DepEd teachers, as it is already embedded in our mission, which states, "To protect and promote the right of every Filipino to quality, equitable, culture-based, and complete basic education." Also, the concept of localization and contextualization is stipulated in the provisions of our 1987 Philippine Constitution, particularly in Article XIV, Section 14, which states that "The State shall foster the preservation, enrichment, and dynamic evolution of a Filipino national culture based on the principle of unity in diversity in a climate of free artistic and intellectual expression," and Article XIV, Section 5. (1), which states that "The State shall take into account regional and sectoral needs and conditions and shall encourage local planning in the development of educational policies and programs."

Part IV. Proposed Intervention Program Based on the research findings, the researcher proposes training and seminars to address the learning gaps in culture-based instructional materials in Araling Panlipunan 8. In this intervention, teachers and learners will be equipped with knowledge used in the Localization and Indigenization of Culture-Based Instructional Materials in the Districts of Atimonan, Schools Division of Quezon. The complete details of the Proposed Intervention Program are appended in Appendix A.

Conclusions

The presented findings served as the basis of the researcher to arrive at the following conclusions:

1. Traditional materials in Araling Panlipunan 8, such as lesson plans and supplemental reading materials, are relatively accessible, although there is still room for improvement in their availability. Graphics and interactives, particularly physical objects, seem to be well-supplied. Dimension of culture elements like values and language are highly available, indicating a strong cultural integration in these aspects.

2. Traditional materials in Araling Panlipunan 8 show a notable level of cultural integration. Graphics and interactives also exhibit a good degree of cultural integration. Dimension of culture elements, especially in values beliefs and symbols, are integrated into the inventory of available culture-based instructional materials in Araling Panlipunan 8.

3. Within the realm of Traditional Resources, the acute shortages in textbooks and lesson plans in Araling Panlipunan 8, demanding an additional 11 textbooks and more lesson plans. There are notable gaps exist in Araling Panlipunan 8 textbooks and lesson plans, requiring an additional 11 textbooks and more lesson plans to meet educational needs effectively. Workbooks and flashcards, while still essential, do not appear to be in significant shortage. Significant gaps are observed in physical objects, photographs, maps, and multimedia resources, with shortages ranging from 4 to 7 items. Games, on the other hand, seem to be relatively well-stocked, with only 2 gaps. There is a pervasive shortage of resources across all subcategories, including values, beliefs and traditions, symbols, language, and place-related to culture-based instructional materials in Araling Panlipunan 8.

Recommendations

Based on the findings and conclusion drawn from the study of available culture-based instructional material in Araling Panlipunan 8, the following are hereby recommended:

1. The study revealed that traditional materials in Araling Panlipunan 8, such as lesson plans and supplemental reading materials, are relatively accessible, although there is still room for improvement in their availability. Graphics and interactive, particularly physical objects, seem to be well-supplied. Dimension of culture elements like values and language are highly available, indicating a strong cultural integration in these aspects. Thus, it is recommended to encourage the

preservation and sharing of local values, beliefs, traditions, symbols, and language within the educational context.

2. The study found out that traditional materials in Araling Panlipunan 8 show a notable level of cultural integration. Graphics and interactives also exhibit a good degree of cultural integration. Dimension of culture elements, especially clothing, are integrated into the inventory of available culture-based instructional materials Thus, it is recommended to encourage educators to incorporate local culture and traditions into lesson plans, even when teaching subjects that may not inherently involve culture
3. The study recorded that within the realm of Traditional Resources in Araling Panlipunan 8, the acute shortages in textbooks and lesson plans, demanding an additional 11 textbooks and more lesson plans. However, it is worth noting that workbooks and flashcards, while still important, do not seem to be in as critical shortage. Shifting to Graphics and Interactive materials, the substantial gaps in physical objects, photographs, maps, and multimedia resources, ranging from 4 to 7 shortages. although games appear to be relatively well-stocked with only 2 gaps. In the domain of dimension of culture, deficiencies are pervasive across all subcategories, with values and language resources exhibiting particularly severe shortages of 12 items each. Thus, it is recommended to allocate resources and funding to acquire or develop the additional 11 textbooks needed to meet educational requirements effectively. Encourage educators to collaboratively create and share lesson plans to bridge the gap and ensure that all subjects are adequately covered.
4. It is recommended that the future researchers may conduct further investigation on other factors that will contribute to the effective implementation of culture-based instructional materials Programs and Project Crafting and Strengthening Instructional Materials (C's and SIM) in Araling Panlipunan 8.

Compliance with Ethical Standards

The researcher commits to respect the data privacy laws and other rules indicated in the data privacy agreement memorandum from the department of Education. All contacts will also be established prior to the study's conduct. The health and safety of the stakeholders as respondents will be taken into account by effective contact with the local IATF and adherence to safe health standards. In addition, accurate data interpretation with total impartially will be maintained in order to enhance the study's standard utilizing

the confirmability approach or respondent validation via summary of results if they agree with any of the likely emerging
viewpoints. Finally, the researcher is liable for any issues that may occur about the participants, gathered data, or the integrity of the study.

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The Researcher

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DAWAT PROGRAM (**D**oors of Opportunity, **A**cceptance of Oneself, **W**orking Together, **A**midst Challenges for **T**ransforming Lives of the learners): **FOR SCHOOL LIFE OF LEARNERS WITH SPECIAL NEEDS**

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ABSTRACT

The study proposed a Dawat Program that may address the school life of the learners with special needs. The respondents were selected through purposive sampling technique from Grade 7 to Grade 12 who were officially enrolled in Lun Padidu National High School for this School Year 2023-2024. Survey guide questionnaire was utilized in generating data on the academic performance and social behavior of the respondents in order to give emphasis in the quantitative aspect of this endeavor. Further, survey guide questions were used in getting information on the experiences of the participants in school as a complementary to the quantitative data collected. Percentage, mean and general point average were utilized in analyzing the numerical data gathered and thematic analysis for the experiences of the participants. The findings revealed that only 1 or 14.3% out of 7 respondents got Very Satisfactory academic performance and 6 or 85.7% got Fairly Satisfactory. Further, the respondents were Fairly Sociable in dealing with their classmates and Not Sociable in dealing with their teachers. They have limited friends in school, very low self-confidence, experienced discrimination and bullying from their classmates and schoolmates. For this, the researchers were eager to propose a DAWAT program in order to address the gaps identified in this endeavor that may help the participants with special needs enhance their potentials as learners, human beings, and citizens of this country by catering them in activities such as sports or indoor games, arts and music, social activities and spiritual aspect for the purpose of giving them value and importance and attention in addressing their needs.

Keywords: *Dawat Program, Special Needs, Social Behavior, Academic Performance*

INTRODUCTION

Having a disability can be one of the most marginalizing factors in a child's life. In education, finding ways to meet the learning needs of students with disabilities can be challenging, especially in schools, districts, regions, and countries with severely limited resources. Inclusive education—which fully engages all students, including students with disabilities or other learning challenges, in quality education—has proven particularly effective in helping all students learn, even while challenges to implementing inclusive education systems remain. This guide provides suggestions for developing inclusive education systems and policies, especially for low- and middle-income countries that are moving from a segregated system toward an inclusive system of education.

Disability is present in every race, ethnicity, gender, sexual orientation, age, and religion. More than a billion people, or 15 percent of the world's population, have some category of disability. Of these, an estimated 150 million children have a disability, and 80 percent of these children live in the developing world (Bulat et al., 2017). These children often face conditions of extreme poverty, exclusion, and discrimination and are denied the basic services offered to their peers without disabilities. The United Nations Children's Fund (UNICEF) estimates that 90 percent of children with disabilities in low-income countries have never received any form of education (UNICEF, 2014).

In Lun Padidu National High School, there were 38 students who have special needs specifically in their physical, mental, or even speech impairment. Further, majority of the learners with special needs affirmed that they had trouble in coping up their lessons, they don't have friends in school, they do not participate in class discussions because of their low self-confidence, and they were quite all the time and always get bored.

Thus, based on the problems identified, it ignited the interest of the researchers to pursue this endeavor to come up with an intervention to address the gaps identified in this study by developing a "DAWAT" program that may give participants a sense of belongingness and giving them importance and value as learners, as human beings, and citizens of this country.

RESEARCH QUESTIONS

This study determined the school life of the learners with special needs of Lun Padidu National High School. Specifically, it answered the following questions:

1. How is the school life of learners with special needs in Lun Padidu National High School in terms of:
    1.1 Academic performance;
    1.2 Social behavior

1.2.1 Classmates; and

1.2.2 Teachers?

2. What are the experiences of the learners with special needs in school?
3. What intervention could be developed based on the findings of the study?

METHODOLOGY

The research design was a qualitative in nature where the purposive sampling technique in choosing the participants who were the learners with special needs was utilized. Before data gathering, the researchers asked first the permission from the Schools Division Superintendent by sending a letter of permission to conduct the study. After that, the researchers sent a letter to the school head.

The survey guide questionnaire was utilized in the generation of data on the academic performance and social behavior of the respondents. While interview guide questions were used which contained questions about the school life of learners with special needs.

This study used descriptive design which investigated the school life of the participants in terms of their academic performance and social behavior as well as their experiences in school in general.

It utilized the Colaizzi's method of analyzing qualitative data in which to employ rigorous data collection procedures, to frame the study within the assumptions and characteristics of the qualitative approach research, tradition of inquiry begin with simple focus, includes detailed methods, rigorous approach, to data collection, data analysis, and report writing, to write persuasively so that the reader experiences "being there" or verisimilitude, analyze data using multiple levels of abstraction, the writing is clear, engaging, and full of unexpected ideas.

The researchers focused for participants who were close to the inclusion criteria. Seven learners with special needs were included for the purposive sampling as set in the inclusion standard. In this study, the researchers set the criteria on how to analyze and interpret the data.

General Point Average, frequency, and percentage were utilized in analyzing the academic performance of the participants while weighted mean was used in analyzing the social behavior of them. Thus, the thematic analysis was used in analyzing their experiences in school.

RESULTS AND DISCUSSION

ACADEMIC PERFORMANCE OF THE STUDENTS WITH SPECIAL NEEDS

Using the document analysis in generating data, the academic performance of the student-respondents is presented below:

Table 1. Academic Performance of the Respondents

Grade	f (n=7)	%	Description
90-100	0	0	Outstanding
85-89	1	14.3	Very Satisfactory
80-84	0	0	Satisfactory
75-79	6	85.7	Fairly Satisfactory
74 and below	0	0	Did not Meet Expectations

The table 1 above shows the academic performance of the respondents.

It further shows that only 1 or 14.3% out of 7 respondents has a very satisfactory academic performance while 6 or 85.7% of the respondents got a fairly satisfactory academic performance.

Thus, the data show that majority of the learners with special needs are not performing academically wherein they did not perform the required competencies in specific curriculum.

The table 2 on the next page shows the social behavior of the respondents in dealing with their classmates. It further shows that the learners with special needs collaborated with their classmates during class activities with a weighted mean of 1.7 which described as Fairly Sociable. Further, they shared their ideas or thoughts with their classmates on any projects or assignments with a weighted mean of 1.5 which described as Fairly Sociable. They spent time with their classmates in school during their free time with a weighted mean of 1.43 which described as Fairly Sociable.

Table 2. Social Behavior of the Respondents in Dealing with their Classmates

Indicators	Weighted Mean	Description
1. Communicate with their classmates in school.	1.39	Not Sociable
2. Collaborated with their classmates during class activities.	1.7	Fairly Sociable

3. Shared personal experiences/problems with their classmates	1.2	Not Sociable
4. Shared ideas or thoughts with their classmates on any projects or assignments.	1.5	Fairly Sociable
5. Spent time with their classmates in school during free time.	1.43	Fairly Sociable
Total	1.44	Fairly Sociable

The table 2 in the previous page shows the social behavior of the respondents in dealing with their classmates. It further shows that the learners with special needs collaborated with their classmates during class activities with a weighted mean of 1.7 which described as Fairly Sociable. Further, they shared their ideas or thoughts with their classmates on any projects or assignments with a weighted mean of 1.5 which described as Fairly Sociable. They spent time with their classmates in school during their free time with a weighted mean of 1.43 which described as Fairly Sociable.

However, they did not share their personal experiences/problems with their classmates with a weighted mean of 1.2 which described as Not Sociable. They did not also share their personal experiences/problems with their classmates.

It is noted that the learners with special needs are not sociable, they kept themselves alone or away from their classmates specifically during collaborative work activities.

Thus, it is a need for the school to formulate a program that would cater, accept, value and give importance to them in order to enhance and boost their self-confidence to pursue their progress and development in social aspect of their lives.

The table 3 in the latter page shows the social behavior of the respondents in dealing with their teachers. It further shows that they never talked with their teachers regarding on their performance in school. They also never communicate with their teachers, Further, they did not share their experiences with their teachers and never asked assistance from their teachers relating to projects and assignments.

Indeed, it is a need for teachers to check the status or conditions of their learners with special needs. They would give time to talk with them which generally show their sympathy and concern toward them.

Table 3. Social Behavior of the Respondents in Dealing with their Teachers

Indicators	Weighted Mean	Description
1. Communicate with their teachers.	1.35	Not Sociable
2. Talked with their teachers regarding on their performance.	1.30	Not Sociable
3. Shared their life experiences with their teachers.	1.27	Not Sociable
4. Asked advises from their class adviser/teachers relating to personal life.	1.0	Not Sociable
5. Asked assistance from their teachers relating to projects and assignments.	1.0	Not Sociable
Total	1.18	Not Sociable

Experiences of the Learners with Special Needs in School.

From the interview conducted with the participants with special needs on their experiences in school revealed four essential themes such as having limited friends, have very low self-confidence, experienced discrimination, and experienced bullying.

Table 4. Themes and Thematic Statements on the Experiences of the Learners with Special Needs in school.

Essential Themes	Thematic Statements
A. Have Limited Friends	Majority of the learners with special needs have limited friends.
B. Very low self-confidence	All of the participants have very low self-confidence.
C. Experienced discrimination	Majority of the participants were discriminated by their peers.
D. Experienced Bullying	All participants were bullied by their peers and classmates.

Have Limited Friends

During the interview conducted where the researchers asked the 7 participants on their experiences in school, majority of the learners with special needs have limited friends as they confirmed.

> SP-1: *I have only limited friends sir because we seldom talked with our classmates and school mates*

SP-2: *I don't have friends sir because I afraid and shy on them, maybe they will laugh at me, but it is alright sir, I accept it even if I hurt*

SP-3: I have only two friends because nobody can accept me as their friend.
SP-4: I do not have friend because I afraid to have friends.

SP-5 I never find friend because they cannot afford to have friend like me.

They said that they have limited friends in school because they often communicate with their classmates and school mates because of their being shy to be with them.

Very Low Self-confidence

All of the participants have very low self-confidence as they confirmed.

SP-1: *I have a very low self-confidence Ma'am because of my disability, I am shy to perform the tasks because I afraid that they may laugh at me*

SP-2: I have a very low self-confidence Ma'am and that because of my disability. I never recited to teachers because I afraid to be bullied by someone else.

SP-3: I do not participate in class discussion because I afraid to be bullied by someone else.

SP-4: I am not asking questions to my teachers because I cannot open my mouth, instead, I just keep quiet.

SP-5: I am shy to participate in school activities because of my condition

SP-6: I never tried volunteer myself to lead in our group activities because of my condition.

SP-7: I did not try to become a leader in any activities in school due to being shy.

It is noted that the student-participants have low self-confidence because of their condition.

Experienced Discrimination

Majority of the participants were discriminated by their peers as they confirmed.

SP-1: I had experienced discrimination Ma'am from my classmates if we have group activities or projects made by group. Sometimes, I could ask why I exist in this world.

SP-3: My classmates discriminated me especially during group activities.

SP-4: I have experienced discrimination with my schoolmates where they disregard my request in school related activities.

SP-6: My classmates did not include me during group discussions.

Experienced Bullying

All participants were bullied by their peers and classmates.

SP-1: *I cannot forget that a lot of students bullied me, sometimes, I cried because I really hurt on the words, they talked about me.*

SP-2: I had experienced bullying from my schoolmates especially if I walked inside of this campus, they laughed at me.

SP-3: Yes, my schoolmates laugh at me when they saw me walking.

SP-4: I had bullied my classmates in times of group activities because of my capacity.

SP-5: My schoolmates bullied my condition by teasing me.

SP-6: My classmates bullied me due to my learning capability as they told me unpleasant words.

SP-7: I always cried at school because my classmates bullied me on my personality.

Generally, majority of the participants with special needs have low academic performance, limited friends, low self-confidence, not participative in class discussions, and experienced bullying from their schoolmates and classmates.

Indeed, there is a need for the teachers to give attention on the status of these learners with special needs by constantly communicate with them. They should be vigilant in looking into the needs of these learners. For this reason, the researchers recommend that the DAWAT program consists of activities to be done should be implemented to address the needs of the learners where this program consists of activities that may transform the learners with special needs into joyful, interested and motivated or excited in going to school that may boost their self-confidence, improve their social aspect,

enhance their talents and interests that may pursue the development of their life as a whole.

INTERVENTION PROGRAM

This study determined the school life of the learners with special needs which was the basis in the formulation of the intervention entitled, “DAWAT Program” or **D**oors of Opportunity, **A**cceptance of Oneself, **W**orking Together, **A** midst Challenges for **T**ransforming Lives of the learners with Special Needs. This intervention will help the identified learners in their development relating to school life. Specifically, this intervention will be implemented to school every last Friday of the month. The activities will cover the arts and music, spiritual, sports specifically indoor games, and social activities that may transform their being bored into fulfillment of joy because of the recreational activities of this program. Thus, these activities will cater the learners with special needs for the purpose of holistic development of them that may transform their lives in school by accepting them as learners, human beings, and citizens of this country by giving them a chance to enjoy and feel valued as a family in school through of these activities.

Furthermore, this DAWAT Program will be implemented through the following processes and procedures. First, the action plan as well as the letter of permission to cater this program in school will be handed or presented to the school principal. As soon as the principal approved the request of implementation, the conference with the teachers will be the next step to do. The orientation and discussion with regards to how this program be implemented will be given emphasis. After the conference with the school faculty, the organization of the teacher in-charge of the specific area like sports, arts and music, sports or indoor games and social activities, as the focus of this program should be organized. Since the organization of the committee has been made, the implementation of this DAWAT Program will be consistently done every last Friday of the month wherein these students who have special needs will be catered according to their field of interest. Those who have talents in sports or indoor games, they would join in that activity, while those who have interested in arts and music, they have to join in that specific activity, the social activities will be catered also as well as the spiritual activities that may develop the students with special needs’ potentials, talents, and skills.

Conclusions

Based on the findings of this study, the following conclusions were drawn:

1. Most of the respondents were fairly satisfactory, they were fairly sociable that have limited friends and seldom communicated with their family.

2. They have very low self-confidence, experience discrimination and bullying from their classmates and schoolmates.
3. The students are not sociable in dealing with their teachers.

Recommendations

1. The researchers recommend this intervention to be implemented to school every last Friday of the month. The activities will cover the arts and music, spiritual, sports specifically indoor games, and social activities that may transform their being bored into fulfillment of joy because of the recreational activities of this program.

2. It is a need for teachers to check the status or conditions of their learners with special needs. They would give time to talk with them which generally show their sympathy and concern toward them.

3. It is a need for the school to formulate a program that would cater, accept, value and give importance to them in order to enhance and boost their self-confidence to pursue their progress and development in social aspect of their lives.

Compliance with Ethical Standards

The authors had emphasized to the participants that they don't have conflicts of interest regarding the research, authorship, and/or publication of this endeavor. The authors were accomplished this study in compliance with the research ethics protocol. Informed consent was given to each participant before the conduct of the study. The data were treated with utmost confidentiality.

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DEVELOPMENT AND EVALUATION OF HYBRID PHOTOVOLTAIC ELECTRICAL SYSTEM MODULAR TRAINER

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ABSTRACT

The study aimed at the development and evaluation of a Hybrid Photovoltaic Electrical System Modular Trainer, focusing on its suitability to educational curricula and industry standards. Through meticulous conceptualization, design, and construction processes, the trainer was tailored to meet the needs of electrical and electronics education. Feedback from Electronics and Electrical teachers, students, and industry partners revealed strong agreement with the trainer's design, functionality, safety, durability, and instructional applicability. While overall acceptability was consistent across respondent groups, variations emerged in perceptions of instructional applicability, particularly between teachers and students. The findings emphasize the importance of considering diverse perspectives in educational tool design. Furthermore, the alignment of laboratory activities with the Electronics Product Assembly and Servicing (EPAS) NC II curriculum underscores the trainer's relevance in vocational education. Overall, the study affirms the Hybrid Photovoltaic Electrical System Modular Trainer as a valuable resource for enhancing hands-on learning experiences in electrical and electronics education, reflecting its successful integration of educational and industry standards.

Keywords: *Modular Trainer, trainer's design, electrical and electronics education, hands-on learning experience, vocational education*

INTRODUCTION

In the Philippines, education is widely recognized as a catalyst for social change and national progress, as enshrined in Article XIV of the 1987 Philippine Constitution. The constitution emphasizes the importance of science, technology, and education in driving national development. Consequently, schools across all levels play a critical role in equipping students with the necessary knowledge, skills, and attitudes to contribute actively to the country's growth and development.

Quality education hinges on the availability of training materials and equipment, collectively referred to as facilities in educational institutions. These facilities are instrumental in providing high-quality education, as they support effective teaching and learning processes. According to Bajet, et.al (2015), a learning institution's overall facilities, which include its instructional gadgets and equipment, play a major role in providing high-quality education. Specialized equipment becomes even more crucial for schools offering Technical-Vocational-Livelihood (TVL) strands. Technical Vocational and Livelihood Schools must provide suitable laboratory facilities and equipment to ensure that students receive hands-on training that simulates real-world industry environments.

Moreover, the Philippine educational system recognizes students' diverse needs and aspirations. After gaining sufficient knowledge, skills, and attitudes, learners are given the opportunity to choose from various curriculum exits, including higher education, middle-level skills development, entrepreneurship, and employment (DepEd, 2018).

The Senior High School TVL track is specifically designed for students seeking immediate employment opportunities after graduation. These vocational courses equip students with the skills and knowledge necessary to obtain certifications relevant to their chosen fields. The importance of technical-vocational education in preparing students for future careers cannot be denied. Technical-vocational education equips students with practical skills and knowledge that are essential for specific industries (Oviawe, 1970). These skills and knowledge are highly valued by employers, as they directly contribute to the productivity and success of businesses. Furthermore, technical-vocational education also provides students with opportunities for entrepreneurship and self-employment.

However, the effective delivery of technical education is hindered by challenges such as a shortage of tools, equipment, and facilities. Inadequate resources can significantly impact students' learning experiences, particularly in technical subjects that require hands-on applications.

Recognizing these challenges, educators often resort to innovative approaches to enhance the teaching-learning process. Despite resource constraints, teachers demonstrate initiative and resourcefulness in improving instructional devices and laboratory equipment for specialized subjects.

One such initiative is the development of a trainer. Using mock-up trainers as teaching tools is a crucial aspect of the teaching-learning process. Pereyras (2020) asserts that acquiring the necessary technical skills and exercises ensures that students will receive a high-quality education in a setting similar to an industrial one. Thus, this study aimed to develop a Hybrid Photovoltaic Electrical System Modular Trainer at Isabela School of Arts and Trades (ISAT). This trainer aims to address the shortage of educational materials and equipment, particularly in the Electronics Product Assembly and Servicing (EPAS) specialization. By providing hands-on experience with renewable energy technologies, the trainer not only enhances students' technical skills but also promotes environmental sustainability.

Additionally, by incorporating a hybrid photovoltaic electrical system modular trainer into technical-vocational education, students can gain hands-on experience and practical training in renewable energy technology (Moses, 2016). This will not only enhance their employability skills and make them more marketable in industries that are shifting towards renewable energy, but it will also contribute to the sustainable development goals of the country. The development of a hybrid photovoltaic electrical system modular trainer for technical-vocational-livelihood students is crucial in equipping them with the necessary skills and knowledge to contribute to the growing demand for renewable energy solutions.

The proposed Hybrid Photovoltaic Electrical System Modular Trainer offers a range of activities aligned with the TESDA National Certificate II for Photovoltaic (PV) System Installation NC II. Through practical exercises such as circuit connections, battery testing, and troubleshooting, students gain valuable experience in solar PV system installation.

By using the Hybrid Photovoltaic Electrical System Modular Trainer, the students can perform different activities like (a) Connection of DC to DC solid state Relay (b) Connection of DC to AC solid state relay (c) Installation of control panel for solar PV system (d) Testing battery charging (e) Series circuit connection of solar panel (f) parallel circuit connection of solar panel (g) Series/parallel circuit connection of solar panel (h)Series circuit connection of battery (i) parallel circuit connection of battery (j) Series/parallel circuit connection of battery (k) Set voltage of low voltage disconnection module (l) Troubleshooting ats solar PV system, (m) Circuit connection of automatic transfer switch, and (o) actual measuring of voltage from solar and battery bank.

In summary, the development of innovative teaching tools like the Hybrid Photovoltaic Electrical System Modular Trainer reflects a commitment to providing quality technical education despite resource constraints. By equipping students with practical skills and knowledge, educational institutions contribute to workforce development and national progress.

Research Questions

This research generally aimed to develop and evaluate the acceptability of a Hybrid Photovoltaic Electrical System Modular Trainer as an instructional material or equipment for training and upgrading students' skills in Electronic Product Assembly and Servicing (EPAS) and Electrical Technology at Isabela School of Arts and Trades.

Specifically, the study sought to answer the following questions:

1. What is the process of developing a Hybrid Photovoltaic Electrical System Modular Trainer?
2. What is the level of acceptability of the proposed Hybrid Photovoltaic Electrical System Modular Trainer in terms of:
    a. design and construction,
    b. functionality,
    c. durability,
    d. safety, and
    e. instructional applicability
3. Is there a significant difference in the level of acceptability of the Hybrid Photovoltaic Electrical System Modular Trainer as perceived by groups of respondents composed of teachers, students, and industry experts?
4. What laboratory activities could be performed using the developed Hybrid Photovoltaic Electrical System Modular Trainer?

METHODOLOGY

The study employed a mixed-method research design namely, the Project Development Method (PDM) because the researcher conceptualized the design and specifications of the Hybrid Photovoltaic Electrical System Modular Trainer, and the Descriptive-Evaluative research as he had the device evaluated along specific criteria. Ninety (90) respondents were involved in this study, consisting of fourteen (14) teachers of Electronics and Electrical Technology, six (6) Industry Partners, and seventy (70) Electronics and Electrical Technology students who were currently enrolled in the Trade schools of the City of Ilagan, Isabela for the school year 2023- 2024. They were purposively selected based on their expertise in this particular field of study.

To carry out the research, the researcher drafted a letter and presented the evaluation instrument to be used to the school division Superintendent to secure permission to conduct the study for ethical purposes. After permission was granted, the researcher wrote a letter to the school heads of the different trade schools in the City of Ilagan. After getting the approval, the researcher floated the questionnaires.

The evaluation questionnaire used in the study was adapted from the study of Bartolome (2019) entitled "Industrial Motor Control System Trainer" and of Angangan (2021) titled "Manually- Operated and PLC Ready Motor Control Trainer". The modified instrument let the respondents evaluate the developed trainer as to its design and

construction, functionality, durability, safety, and instructional applicability. The instrument is considered valid and reliable since the two studies mentioned were already published in international refereed journals.

Data gathered were analyzed using weighted mean to know the level of acceptability of this newly developed trainer in terms of *design and construction*, *functionality*, *durability, safety, and instructional applicability* and analysis of variance (ANOVA) to compare the responses and evaluations of the respondents in terms of the identified variables. Meanwhile, the five-point Likert's rating scale was used in determining the descriptive meaning of the indicators of the variables used, as shown below.

Scale	Mean Range	Qualitative Description
5	4.20 – 5.00	Strongly Agree (SA)
4	3.40 – 4.19	Agree (A)
3	2.60 – 3.39	Moderate Agree (MA)
2	1.80 - 2.59	Disagree (D)
1	1.00 – 1.79	Strongly Disagree (SD)

RESULTS AND DISCUSSION

About the Hybrid Photovoltaic Electrical System Modular Trainer

Technical specialists and a variety of writers' writings and publications that are directly related to ideas and operating principles of the Hybrid Photovoltaic Electrical System Modular Trainer were reviewed like Rahman, et. al. (2022) who discussed extensively photovoltaic technology, Myer (2020) who developed a solar modular power with parallel AC and DC wiring, and Rostand, et.al. (2019) who explained about solar automatic transfer switch. The Hybrid Photovoltaic Electrical System Modular Trainer is assembled in a modular board with an electrical system and safety devices for actual performance and shop laboratory uses, the design and implementation of each of the fundamental circuit units and how the program was implemented to, control the plan and perform the required functionality. From the bellow illustration, it can be seen that the significant parts of the system include the following:

- Solar panels / PV array (PV modules)
- Charge controller
- Battery bank
- Inverter
- Disconnecting Switch Devices/ Automatic Transfer Switch
- Safety Devices

Process in Developing Hybrid Photovoltaic Electrical System Modular Trainer

To develop successfully the Hybrid Photovoltaic Electrical System Modular Trainer, the researcher followed the process of conceptualization, design, and construction. In constructing the project, he made sure that the Hybrid Photovoltaic Electrical System Modular Trainer should be suited to the curriculum/subjects. It is appropriate for Electrical and Electronics teachers, students, and industry experts' level of understanding. He also checked the availability of supplies and materials to be used from local stores. And, he made sure that the developed trainer could be manually operated, user-friendly, and suitable for the learners for their practical or hands-on application.

In constructing the project, the researcher prepared the tools materials equipment needed, measured and cut the metallic tubular bars according to their right dimension, and welded the cut tubular bars to their desired dimensions based on the plan of the trainer.



Figure 1. Measuring and cutting tubular

He then ground the surface of welded parts to remove slag and applied buddy filler, applied paint on the surface of the finished frame assembly, cut the plyboard according to the specific dimensions, covered the back of the frame, and assembled it using plywood.



Figure 2. Painting the assembled frame of the trainer

Next, he assembled and mounted all electrical components and devices in the modular boards according to their layout and design. He also attached the modules to the frame assembly and attached the banana jacks to the electrical components mounted inside the modules.



Figure 3. Mounting electrical modules to the assembled frame

Finally, he did the testing.This is the phase where the trainer is put into operation. Before energizing the trainer, the researcher made sure that all electrical components were free from grounded conductors.



Figure 4. The researcher tests the functionality of the newly developed Hybrid Photovoltaic Electrical System Modular Trainer

Level of Acceptability of the Proposed Hybrid Photovoltaic Electrical System Modular Trainer

Tables 1-5 below present the summary of the evaluation of the three groups of respondents on the hybrid photovoltaic electrical system modular trainer. The evaluation results of the hybrid photovoltaic electrical system modular trainer demonstrate robust satisfaction across multiple dimensions.

Table 1. Level of acceptability of the proposed Hybrid Photovoltaic Electrical System Modular Trainer in terms of Design and Construction.

A. Design and Construction	Mean	SD	Description
1. The trainer has a unique design and construction.	4.60	0.49	Strongly Agree
2. The trainer can be easily reproduced for student use.	4.20	0.67	Strongly Agree
3. The trainer has components that are well assembled and visible for easy understanding	4.64	0.50	Strongly Agree
4. The trainer has components that are tough and tension-resistant.	4.47	0.56	Strongly Agree
5. The trainer is strong and in good condition.	4.62	0.49	Strongly Agree
Mean	4.50	0.28	Strongly Agree

In Table 1, the respondents strongly agreed to the unique design and construction of the developed trainer (4.60) as it had well-assembled and visible components for easy

understanding (4.64), and had tough and tension-resistant components (4.47) and was strong and of good condition (4.62).

The grand mean of 4.50 shows the respondents' strong agreement with the overall design and construction of the developed proposed Hybrid Photovoltaic Electrical System Modular Trainer.

This finding is supported by the study of Gonzales, et. al (2022) which found that the developed trainer has well-designed and well-assembled components and construction.

Table 2. Level of acceptability of the proposed Hybrid Photovoltaic Electrical System Modular Trainer in terms of Functionality

B. Functionality	**Mean**	**SD**	**Description**
1. The trainer shows the actual operation of HPESMT	4.71	0.50	Strongly Agree
2. The trainer can serve its purpose and is efficiently	4.59	0.54	Strongly Agree
3. The trainer is easy to operate and maintain.	4.57	0.60	Strongly Agree
4. The trainer can be manipulated by students for easy understanding of concepts.	4.43	0.58	Strongly Agree
5. All components of the trainer work well for the shop activities	4.69	0.49	Strongly Agree
Mean	4.60	0.27	Strongly Agree

As shown in Table 2, functionality emerged as a standout feature of the developed trainer. The three groups of respondents strongly agreed on its efficacy in demonstrating the system's operation (4.71), can serve its purpose efficiently (4.59), is easy to operate and maintain (4.57), can be manipulated by students for easy understanding of concepts (4.43), and all components of the trainer work well for shop activities (4.69). The grand mean of 4.60 indicates that the respondents strongly agreed with the functionality of the developed Hybrid Photovoltaic Electrical System Modular Trainer.

Santos (2019) highlights that the functionality of the trainer gives chances for various activities in shop work concerning practical electronics and electrical circuits through the use and application of active components.

Table 3 exhibits the evaluation of the three groups of respondents in the Hybrid Photovoltaic Electrical System Modular Trainer in terms of Safety.

Table 3. Level of acceptability of the proposed Hybrid Photovoltaic Electrical System Modular Trainer in terms of Safety.

C. Safety	Mean	SD	Description
1. The trainer is equipped with safety and protective devices.	4.51	0.54	Strongly Agree
2. Connectors are insulated to minimize short circuits and electrocution.	4.58	0.58	Strongly Agree
3. The trainer is easy to maintain	4.41	0.61	Strongly Agree
4. The trainer has movable parts which are properly mounted for safety	4.68	0.47	Strongly Agree
5. The trainer components are mounted on a non-conductor material.	4.40	0.59	Strongly Agree
Mean	4.51	0.34	Strongly Agree

In terms of safety features of the developed trainer, the respondents strongly agreed that the trainer was equipped with safety and protective devices (4.51), had connectors that were insulated to minimize short circuits and electrocution (4.58), was easy to maintain (4.41), had movable parts which are properly mounted for safety (4.68), and it had components mounted on a non-conductor material. With a grand mean of 4.51, the respondents strongly agreed with the safety of the trainer.

This finding concurred with the study of Angangan (2021) which found that a proper design and construction of the trainer would prevent risk from happening during actual activity.

Table 4 below reflects the evaluation of the three groups of respondents of the Hybrid Photovoltaic Electrical System Modular Trainer in terms of durability.

Table 4. Level of acceptability of the proposed Hybrid Photovoltaic Electrical System Modular Trainer in terms of Durability.

D. Durability	Mean	SD	Description
1. The trainer power bank can survive in the long run	4.63	0.53	Strongly Agree
2. The trainer components are fixed	4.51	0.54	Strongly Agree
3. The trainer can stay strong for long condition	4.59	0.60	Strongly Agree
4. The trainer wire and conductor used are in good condition	4.62	0.49	Strongly Agree
5. The parts and components can strongly resist tension.	4.54	0.54	Strongly Agree

Mean	4.58	0.26	Strongly Agree

As can be seen in the table above, the respondents expressed confidence in the proposed Hybrid Photovoltaic Electrical System Modular Trainer since they strongly agreed to its durability as indicated by the grand mean of 4.58.

Specifically, they strongly agreed that the trainer's power bank could survive in the long run (4.63), had fixed components (4.51), could stay strong for long condition (4.59), used wire and conductor in good condition (4.62), and its parts and components could strongly resist tension.

This result implies that the materials, supplies, and components can last long. Further, the result of the study is backed by Velasco's (2018) findings that to develop a trainer or a device, it should be made of durable supplies and materials and should be designed in such a way that it can resist or withstand any weather conditions.

Table 5 presents the evaluation of the three groups of respondents of the proposed Hybrid Photovoltaic Electrical System Modular Trainer in terms of Instructional Applicability.

Table 5. Level of acceptability of the proposed Hybrid Photovoltaic Electrical System Modular Trainer in terms of Instructional Applicability.

E. Instructional Applicability	**Mean**	**SD**	**Description**
1. The trainer is effective for instructional and shop work use.	4.77	0.45	Strongly Agree
2. The trainer is suited to the student's specialization in electrical and electronics subjects for laboratory	4.66	0.48	Strongly Agree
3. The operation and manipulation of the trainer are according to the needed action for each activity.	4.53	0.58	Strongly Agree
4. The trainer can be used to improve the teaching-learning process.	4.66	0.48	Strongly Agree
5. The trainer is suited for TVL Senior High School learners.	4.73	0.47	Strongly Agree
Mean	4.67	0.26	Strongly Agree

As shown by the above data, the respondents strongly agreed with the overall instructional applicability of the trainer with a grand mean of 4.67. In particular, they had strong agreement on the trainer being effective for instructional and shop work use (4.77), its suitability to student's specialization in electrical and electronics subjects for laboratory (4.66), with the operation and manipulation of the trainer following the needed action for

each activity (4.53), could be used to improve the teaching-learning process (4.66), and it is being suited for TVL Senior High School learners (4.67).

The above results are backed by the findings of Milkić, et, al (2018) which show that by using a trainer, students can learn new information and skills about everything under laboratory conditions. Moreover, it was proved that the developed trainer can be a good foundation for the development of new teaching approaches for renewable power academic studies.

In the same vein, Bartolome's (2018) study found that his developed trainer was suitable for addressing the dearth of training equipment used in the school laboratory/workshops thereby indicating its instructional applicability.

Furthermore, Angangan (2021) found out that instructional apparatus and instructional materials could further improve the teaching and learning process thus recommending the development of trainers.

Finally, Tejano (2018) emphasized that using technology in the classroom is an effective way to help students conceptualize concepts by showing them how to do a certain task.

Comparison in the Level of Acceptability of the Hybrid Photovoltaic Electrical System Modular Trainer as Perceived by Groups of Respondents

To determine if there was any significant difference in the level of acceptability of the Hybrid Photovoltaic Electrical System Modular Trainer as perceived by groups of respondents composed of teachers, students, and industry experts, an analysis of variance was employed. The result is presented in Table 6 below.

Table 6. Comparison in the level of acceptability of the Hybrid Photovoltaic Electrical System Modular Trainer among teachers, students, and industry experts

Indicator	F-value	p-value	Comparison	Decision	Remark
Design and Construction	0.99	0.37	p-value > 0.05	Accept null hypothesis	Not significant
Functionality	1.48	0.23	p-value > 0.05	Accept null hypothesis	Not significant
Safety	1.42	0.25	p-value > 0.05	Accept null hypothesis	Not significant
Durability	0.42	0.66	p-value > 0.05	Accept null hypothesis	Not significant
Instructional Applicability	4.63	0.01	p-value < 0.05	Reject null hypothesis	Significant

The analysis shows important insights across various indicators. Firstly, concerning design and construction, the statistical evaluation, with a p-value of 0.37 and an F-value of 0.99, suggests that there was no significant difference in perception among the groups. This indicates a consensus regarding the trainer's design and construction quality.

Similarly, the assessment of functionality reveals a p-value of 0.23 and an F-value of 1.48, leading to the acceptance of the null hypothesis. Consequently, there was no notable distinction in perceptions of the trainer's functionality, indicating agreement among the groups on its operational performance.

In terms of safety, the analysis obtained a p-value of 0.25, alongside an F-value of 1.42, further supporting the acceptance of the null hypothesis. This implies that teachers, students, and industry experts largely share similar views on the safety features of the trainer.

Moreover, concerning durability, the statistical examination yielded a p-value of 0.66 and an F-value of 0.42, leading to the acceptance of the null hypothesis. Thus, there was no significant difference in perceptions of the trainer's durability among the groups. However, a notable difference emerged on instructional applicability, with a p-value of 0.01 and an F-value of 4.63, surpassing the significance threshold. This suggests varied perspectives among the groups regarding the trainer's effectiveness for instructional purposes.

In summary, while agreement prevails among teachers, students, and industry experts regarding the trainer's design, functionality, safety, and durability, disparities exist in their views on its instructional applicability. Further exploration is warranted to discern underlying factors contributing to this variation and refine the trainer's instructional utility accordingly.

Table 7. Multiple Comparison (among the respondents on the instructional applicability of the trainer)

Respondents		Mean Difference	Std.Error	Sig.
Teachers	Students	0.22*	0.07	0.01
	Experts	0.19	0.12	0.28
Students	Teachers	-0.22*	0.07	0.01
	Experts	-0.03	0.11	0.94
Experts	Teachers	-0.19	0.12	0.28
	Students	0.03	0.11	0.94

Table 7 shows the multiple comparisons of the responses of the respondents on the instructional applicability of the modular trainer using Tukey.

The analysis of respondent perceptions regarding instructional applicability of the Hybrid Photovoltaic Electrical System Modular Trainer highlights significant differences in viewpoints between teachers and students while revealing no notable distinctions between teachers and industry experts, as well as between students and experts. Specifically, the comparison between teachers and students indicates a statistically significant mean difference of 0.22 ($p = 0.01$), suggesting that teachers perceived the trainer more favorably compared to students. Conversely, there were no significant differences in perceptions between teachers and industry experts, nor between students and experts, with p-values of 0.28 and 0.94, respectively. This implies that both teachers and experts, as well as students and experts, held similar perspectives regarding the trainer's attributes.

Laboratory Activities That Could be Performed Using the Developed Hybrid Photovoltaic Electrical System Modular Trainer

The developed Hybrid Photovoltaic Electrical System Modular Trainer comes with a laboratory manual that is based on selected competencies of Electronics Product Assemble and Servicing (EPAS) NC II at Isabela School of Arts and Trades, City of Ilagan. Table 8 below shows the list of laboratory activities that could be performed with a photovoltaic electrocortical system modular trainer.

Table 8. List of Laboratory Activities

	Laboratory Activity
1	Connection of DC-to-DC solid state Relay
2	Connection of DC to AC solid-state relay
3	Installation of the control panel for solar
4	PV system
5	Testing battery charging
6	Series circuit connection of solar panel
7	Parallel circuit connection of solar panel
8	Series/parallel circuit connection of solar panel
9	Series circuit connection of the battery
10	Actual measuring of voltage from solar and battery bank.
11	Parallel circuit connection of the battery

Conclusions

In conclusion, the development and assessment of the Hybrid Photovoltaic Electrical System Modular Trainer have yielded impressive results. Through meticulous conceptualization, design, and construction processes, the trainer has been tailored to meet the needs of both educational curricula and industry standards. The strongly positive feedback from Electronics and Electrical teachers, students, and industry partners underscores the trainer's excellence in design, functionality, safety, durability, and instructional applicability. While overall acceptability was consistent across respondent

groups, notable variations emerged regarding instructional applicability, particularly between teachers and students. This suggests the importance of considering diverse perspectives when designing educational tools. Moreover, the alignment of laboratory activities with the Electronics Product Assembly and Servicing (EPAS) NC II curriculum further solidifies the trainer's relevance in vocational education. Overall, these findings affirm the Hybrid Photovoltaic Electrical System Modular Trainer as a valuable resource for enhancing hands-on learning experiences in the field of electrical and electronics education.

Recommendations

Based on the findings and conclusions in this study, the following recommendations are advanced:

1. Continuous involvement of Electronics and Electrical teachers, students, and industry partners in the further development and improvement of the trainer is encouraged. Their feedback is essential for ensuring that the trainer remains relevant and effective.

2. Given the differences in perceptions between teachers and students regarding instructional applicability, consider implementing customizable features or modules that cater to the unique learning styles and needs of both groups.

3. The researcher is encouraged to establish a system for continuous evaluation and iteration based on feedback from users. This will help in identifying areas for improvement and ensuring that the trainer evolves to meet changing educational requirements.

4. The school that uses the trainer should provide training sessions or workshops for teachers to maximize the instructional potential of the trainer. This can help educators make the most of the resources available and enhance the student’s learning experience.

5. Collaboration between educational institutions and industry partners to create real-world projects and situations that can be integrated into the training modules is encouraged. This shall provide students with practical hands-on experience and enhance their skill development.

6. The school (ISAT-DepEd) should look into opportunities to align the developed trainer *(Hybrid Photovoltaic Electrical System Modular Trainer)* with other relevant curricula or certifications beyond EPAS NC II to broaden its educational impact and reach a wider audience of learners.

Compliance with Ethical Standards

Following ethical standards, this research adheres to principles of integrity, respect, and responsibility towards all participants involved. Before the conduct of the

study, the researcher obtained informed consent from the participants, ensuring their understanding of the study's purpose, procedures, and potential risks. Confidentiality and anonymity were preserved throughout data collection, analysis, and dissemination, safeguarding participants' privacy. Moreover, the researcher made sure that there was no conflict of interest in conducting the study, avoided plagiarism issues, and no bias was made in the interpretation of the results of the study. Finally, he ensured that the findings were used only for the research.

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DEVELOPMENT AND VALIDATION OF AN INSTRUMENT TO MEASURE THE TEACHERS' READINESS, COMPETENCE, AND PRACTICES TOWARDS INTERNATIONAL LARGE-SCALE ASSESSMENT

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ABSTRACT

The aim of the study was to develop and validate the survey instruments utilized to measure teachers' readiness, competence, and practices towards international large-scale assessment**.** This study was research and development (R&D) implementing the ADDIE model. However, this study was limited to the test of validity and reliability. There were five indicators for each that measures the constructs of teachers' readiness, competence, and practices towards international large-scale assessment**.** Based on the data analysis, it was found that the test of validity using Aiken's V formula of teachers' readiness, competence, and practices towards international large-scale assessment instrument established highly valid which was indicates suitable for use because it has been fulfilled aspects of clarity and direction of items, presentation and organization of items, suitability of items, adequateness of the content, attainment of the purpose, objective, scale, and evaluation of rating; the test of reliability of established excellent which was appropriate to be used to assess teachers' readiness, competence, and practices towards international large-scale assessment. From the research finding, it can be concluded that the survey questionnaire is valid and very reliable to measure the teachers' readiness, competence, and practices towards international large-scale assessment.

Keywords: *International Large-Scale Assessment, Competence, Practices, Readiness, Teachers*

INTRODUCTION

Assessment plays a vital role in any reform. It is conducted to evaluate the needs for a reform, identify the kind of reforms needed, monitor the implementation of the reform, measure the effects, and assess the effectiveness of the whole reform to ensure that the investment is worthwhile. In education, assessment is often used for three different purposes – assessment for learning, assessment as learning, and assessment for learning. While the role of assessment in improving education is vital, there are several critical aspects of education that matter most for student learning. These key factors include well-prepared teachers, well-designed and coherent curriculum, skillful instruction that is adapted to students' needs, and personalized learning environments in which students are well-known by their teachers (Samosa & Navarro, 2024). Providing these key features of a sound education is a major foundation of an accountability system.

Taking aside, types of assessment practices and assessment competence are the defining part of collecting information to improve the student's learning ability (Mutlu, 2020). Assessment of the learners' is a vital part of teaching since it enables teachers to fully understand the capabilities of their students and to develop appropriate instructional strategies that positively influence academic learning (Mills, 2022).

As such, international large-scale assessments (ILSA) are considered an important tool for studying education systems and for formulating evidence-based policies, some researchers argue that "the use of international assessment data can result in a range of unintended consequences, such as the shaping and governing of school systems 'by numbers'" (Johansson, 2020). Some major international large-scale assessments (ILSA) include the Program for International Student Assessment (PISA), and the Trends in International Mathematics and Science Study (TIMSS).

Espinosa, et al, (2023) identified four models of motivation driving countries to participate in the ILSA studies: (1) the financial aid model; (2) the macro-dissatisfaction perspective; (3) the policy diffusion model; and (4) the rational choice model. In the case of the Philippines, the Department of Education seems to be motivated by the rational choice model. Malaluan (2021) stated that the "objective in participating in PISA was to look in the mirror and find out how our learners compared with the rest of the world, and to generate important data to deepen our understanding of the major factors that impact student performance". The Philippines' participation in ILSA is explicitly spelled out in the country's Department of Education's Policy Guidelines on System Assessment Policy in the K to 12 Basic Education Program (DepEd, 2017). The Philippines joined the PISA

2018, the first ILSA the country participated in since the current K to 12 Basic Education Program was implemented.

However, previous studies highlighted several issues related to teachers and their classroom assessment practices. These include inadequate knowledge of fundamental assessment and measurement concepts (Bichay-Awadalla & Bulotsky-Shearer, 2022), inadequate training in assessment (Samosa, 2022) and failure of teachers to correctly utilize the guidelines for the learners in assessment courses (Di Liberto et al., 2022).

Looking on the literature evidences the lack of to measure teachers' readiness, competence, and practices towards international large-scale assessment. There is an evident lack of research that investigates instruments to measure teachers' readiness, competence, and practices towards international large-scale assessment**.**

Research Objectives

To test the validity and reliability of the teachers' readiness, competence, and practices towards international large-scale assessment and the relevance of this questionnaire.

METHODOLOGY

This study utilized research and development (R&D) intended to produce an instrument for teachers' readiness, competence, and practices towards international large-scale

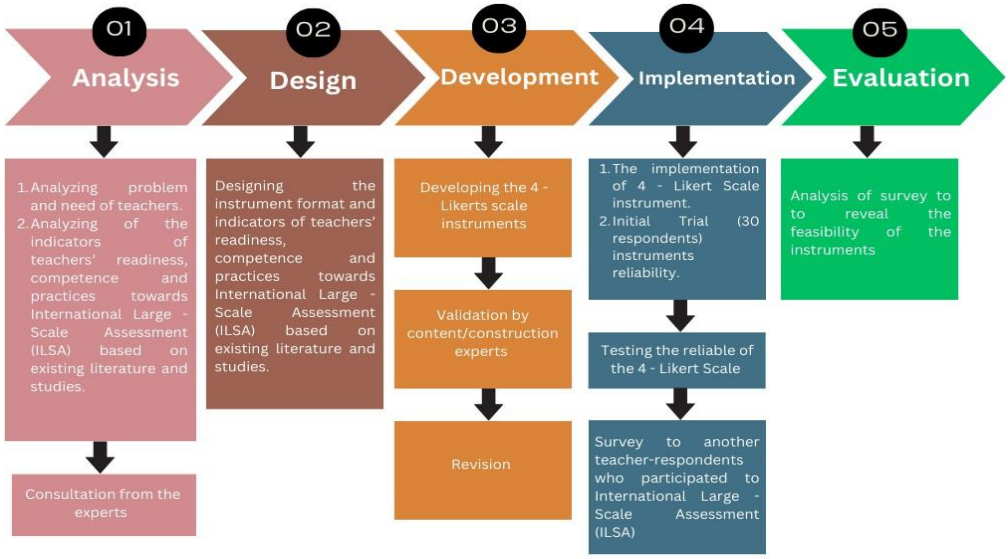


Figure 1:
ADDIE MODEL OF RESEARCH & DEVELOPMENT
DESIGN OF THE STUDY

assessment. The development model applied in this study was ADDIE model which consists of the stage of Analysis, Design, Development, Implementation, and Evaluation. The studied was limited to the analysis, design, development, validation, and reliability stages from expert judgement.

PROCEDURES

Stage 1 Analysis, it included the problem analysis and needs analysis of the teachers, analysis of indicators for teachers' readiness, competence, and practices towards international large-scale assessment.

The analysis of teachers' needs included analyzing the importance of teachers' readiness, competence and practices development based on the towards international large-scale assessment. Then, the analysis of teachers' readiness, competence and practices indicators consisted of analysis of expert opinions towards international large-scale assessment listed in scientific articles.

Stage 2 Design, the researcher designed the method of assessment instruments. The design was started from defining the indicator, which was used as a recommendation in developing the instruments. Then, the instrument was equipped with a scoring technique; therefore, the design of the scoring technique was defined based on the form of the instrument to be developed.

Stage 3 Development, at this stage, the researcher developed the 4- Likert scale that based on several aspects, indicators, and domains. These instruments were validated by experts based on the aspects of clarity and direction of items, presentation and organization of items, suitability of items, adequateness of the content, attainment of the purpose, objective, scale, and evaluation of rating. The validators provided advice and inputs on the instruments to improve a valid instrument. As a result, a valid instrument could be used to assess the teachers' readiness, competence, and practices towards international large-scale assessment.

SAMPLE & SAMPLING TECHNIQUES

The sample of this study were thirty (30) science teachers who joined in in the international large-scale assessment in province of Bulacan. Before the actual survey conducted, pilot studies were conducted to test the reliability and validity of the research instrument to use. This is to prevent confusion and identify the weaknesses of the built-in items (Creswell & Creswell, 2018). Five (5) science experts with doctorate degree in

science underwent face validation on the research instruments. To answer the reliability of this instrument, a total of thirty (30) samples were randomly selected. Research scholar and test experts recommend a pilot study sample between 10 and 30 respondents or need to exceed 20 (Samosa & Dantay, 2023). Random sampling is chosen to respond to the instruments constructed and involve samples from various angles and areas (Creswell & Clark, 2017).

DATA ANALYSIS

The techniques of quantitative data analysis were used to analyze the indicators of teachers' readiness, competence, and practices towards international large-scale assessment based on the results of validation from 4 experts. In this study, the data analysis was explained descriptively. The analysis stage began with the validation by experts regarding the aspects of clarity and direction of items, presentation and organization of items, suitability of items, adequateness of the content, attainment of the purpose, objective, scale, and evaluation of rating. The validation was conducted by giving a questionnaire to the experts. Then, the validators were also asked to provide suggestions and inputs to revise the deficiencies in the instrument. The results of validation were analyzed using Aiken's V. If the value of Aiken's V was lower than the minimum value of Aiken's V, the item was considered invalid. The items that were declared valid were revised based on the notes provided by the validators. The formula is presented below:

$$V = \frac{\boldsymbol{\Sigma\, S}}{[\, n\,(c-1)]}$$

Note:

V = Validity Aiken
S = r – lo
lo = the lowest validity rating score
c = the highest validity rating score
r = score given by validator n = number of validators

Table 1
Validity Aiken

The value of V	Interpretation
$0.80 < V \leq 1.00$	Very high
$0.60 < V \leq 0.80$	High
$0.40 < V \leq 0.60$	Adequate
$0.20 < V \leq 0.40$	Low
$0.00 < V < 0.20$	Very low

The validation of the teachers' readiness, competence, and practices towards international large-scale was measured by utilizing 4 – Likert scale validation form. This was performed by giving checklist on the choice by expert validators. In addition, there was also a space for the expert validators to write inputs/ suggestions on this validation sheet. The 4 – Likert scale validation form is displayed in Table 2.

Table 2
Rating Description of Face Validation

Rating	Interval	Interprettaion	Description
4	3.28 – 4.00	Highly Valid	The questionnaire is valid and can provide unbiased data for investigation, allowing 0 – 5% error.
3	2.52 – 3.27	Valid	The questionnaire is valid and can provide unbiased data for investigation, allowing 6 - 10% error.
2	1.76 – 2.51	Less Valid	The questionnaire is valid and can provide unbiased data for investigation, allowing 11 – 20% error.
1	1.00 – 1.75	Not Valid at all	The questionnaire is valid and can provide unbiased data for investigation, allowing more than 20% error.

After that, the collected data were analyzed by using descriptive statistical analysis techniques. The data were processed through numbers in the form of weighted mean.

After the validity was established, it was pilot tested for thirty (30) teacher-respondents to determine its reliability. Using Cronbach's alpha, the instruments were tested it reliability. Alpha Test of Reliability. All noted discrepancies or vague statements on the instruments were integrated and incorporated in the finalization of the instrument. Cronbach's alpha is a measure of internal consistency that is calculated using sample variance, total scores, and number of items. Cronbach's alpha is used to assess how consistently multiple items in a survey or test assess the same skill or characteristic. Higher values of Cronbach's alpha suggest higher internal consistency. The Cronbach's alpha scale is displayed in Table 3. The formula is presented below:

$$\alpha = \frac{\mathrm{N} * \bar{\mathrm{c}}}{\bar{\mathrm{v}} + (\mathrm{N} - 1) * \bar{\mathrm{c}}}$$

Where:

N = number of items

$\bar{c}$ = mean covariance between items.

$\bar{v}$ = mean item variance.

Table 3
Cronbach's alpha Reliability

The value of Cronbach's alpha	Internal Consistency
$\alpha \leq 0.9$	Excellent
$0.9 > \alpha \geq 0.8$	Good
$0.8 > \alpha \geq 0.70$	Acceptable
$0.7 > \alpha \geq 0.60$	Questionable
$0.06 > \alpha \geq 0.50$	Poor
$0.50 > \alpha$	Unacceptable

Once all the necessary procedures for validity and reliability have been taken into consideration, the research checklist-questionnaire will then be finalized.

RESULTS & DISCUSSION

This portion discusses the findings obtained from the test of validity and reliability of developed survey instruments. Furthermore, it interprets and analyzes data gathered based on survey – questionnaires given to the -respondents.

Analysis of Phase

Stages of developing the instrument started with an initial analysis and the needs of teachers' readiness, competence, and practices towards international large – scale assessment. After the reading of literature and studies focuses on the international large assessments results in science (OECD, 2019; Belmi, & Mangali, 2020; Balagtas, et al., 2020; & Balagtas, 2021) factor that may be attributed to the low international large – scale assessment ranking of the Philippines is the mode of test administration was facilitated through a computer-based test to be accomplished in two hours. The implication of computer-based assessment in large-scale testing revealed that anxiety levels of learners' increase when they know that they are being monitored while using computers in answering tests. More so, the learning competencies in the K to12 Science Curriculum are not proportionately and appropriately distributed across grade levels in terms of cognitive demand as there is a high concentration of learning competencies that involve tasks of low-level cognitive demand and the lack of explicit inclusion of topics in Earth and Space Systems (Belmi, & Mangali, 2020). From this, identified competencies, it was necessary to include in the instruments to measure the teachers' readiness, competence, and practices towards alignment of the content and objective from MATATAG Curriculum to international large-scale assessments and the skills in computer-based assessment.

The analysis of the indicators of the teachers' readiness, competence, and practices towards international large-scale assessment

The analysis of survey instruments was carried out by selecting competencies that measures teachers' readiness, competence, and practices towards international large-scale assessment that would be developed for the assessment instruments. The following are the definitions of the constructs that measure teachers' readiness, competence, and practices towards international large-scale assessment.

Table 4
Teacher Readiness

Constructs	Definitions
Teacher Readiness	The degree of how good and confident the teachers are in conducting learning assessments aligned with large – scale assessments.
Attainment of Objectives	Targets which specify the knowledge, understanding and skills related to mathematics that learners are expected to have acquired by the end of assessments against a predetermined set of criteria which is clearly articulated levels specifying the degree of proficiency to be attained.
Participation of Learners and Teachers	The learners and teachers being active and engaged, impacting on curriculum innovation implemented; and feeling of belonging to the attainment of science performance.
Utilization of Strategies	It is a systematic approach to the process and use of different assessment tools and mechanisms to aide in the learning process that provides learners to participate, connect, and add excitement to the content being delivered.
Test Results	It provides what the learners have learned what they are expected to learn, such as whether they have met state learning standards which also identify gaps in learners' learning and academic progress.
Utilization of Instructional Materials	It is aspects that are taken into account the use of Instructional delivery and design to gain acceptance, implement, and institutionalize a program of instruction of content from the teaching and learning process.

Table 5
Teacher Competence

Constructs	Definitions
Teacher Competence	It refers to the ability of teachers to design, implement, and interpret assessments effectively and ethically. In this study, it is the ability of the science teachers' capacity to select appropriate assessment methods, develop valid and reliable assessment instruments, analyze and interpret assessment data, and use assessment results to inform instruction and decision-making. It is extending science teachers to evaluate the knowledge, skills, and performance of others in a fair, accurate, and meaningful manner.
Content Knowledge and Pedagogy	**Content Knowledge.** It is used when referring to the contained thing as an undifferentiated whole. In the study what is considered as content are the parts of a full-length execution of a lesson through a daily lesson plan or the contents of an evaluation tool. **Pedagogy.** It is most understood as the approach to teaching, refers to the theory and practice of learning, and how this process influences, and is influenced by, the social, political, and psychological development of learners. In the study, pedagogy is a vital component in rating science teacher's competence.
Learning Environment	This refers to the diverse physical locations, contexts, and cultures in which students learn. In the study, learning environment is one of the key competences that teachers need to assess to say whether or not they are competent in performing their mandate as public school teachers.
Diversity of Learning	It is the infinite variety of life experiences and attributes a child brings to their formal learning at school that teachers seek to meet the needs of all learners, so that every student experience success.
Curriculum and Planning	**Curriculum.** Referring to the lessons and academic content taught in a school or in a specific course or program. In the study, an individual teacher's curriculum, for example, would be the specific learning standards, lessons, assignments, and materials used to organize and teach a particular course. All these make up a curriculum. **Planning**. It is the process of thinking about the activities required to achieve a desired goal. It is used in study as the first and foremost activity to achieve desired results. It involves the creation and maintenance of a plan, such as psychological aspects that require conceptual skills.

Assessment and Reporting	**Assessment.** The activities and instruments used by the teacher in monitoring the progress and measuring the learning of the students. **Reporting.** It is the presentation of honest, credible and impartial information. In the study, reporting has to do with making certain stakeholders like that of the parents inform them about the progress of their children in school.
Professional Development	It is learning to earn or maintain professional credentials such as academic degrees to formal coursework, attending conferences, and informal learning opportunities situated in practice. In the study, it has been described as intensive and collaborative, ideally incorporating an evaluative stage.
Community Linkages	It refers to the connections and relationships established between individuals, organizations, and communities to promote collaboration and resource. It is expected that science teachers to identify and respond to opportunities that link teaching and learning in the classroom to the experiences, interests and aspirations of the wider school community and other key stakeholders. In this study, it concerns the importance of science teachers' understanding and fulfilling their obligations in upholding professional ethics, accountability and transparency to promote professional and harmonious relationships with learners, parents, schools and the wider community.

Table 6
Teacher Practices

Constructs	Definitions
Teacher Practices	The degree of how good and confident the teachers are in conducting learning assessments aligned with large – scale assessments.
Planning for Assessment	The set of guidelines or steps followed by the teacher-respondents in designing and developing the assessment tasks.
Collection of Learning Evidence	The assessment practices, both formative and summative, are done by the teacher-respondents in determining the learning status and monitoring the learning progress of their learners.
Interpretation and Communication of Evidence	The practices of the teacher-respondents in: (1) analyzing and making sense of the data collected from the assessment tasks; and (2) reporting the results to the learners and parents.
Support Provided to Engage Students Actively	The assessment practices of the teacher-respondents in motivating the learners and ensuring that learning will take place through assessment tasks.
Learning Contents Assessed	It is the learning competencies and specific learning objectives covered by the topics discussed by the teacher.
Application of Assessment Evidence	The impact of the evidence collected from the assessment methods and how it affects future instruction and assessments in terms of planning and decision making.

Designing and Development Stage

Based on the problem analysis and needs analysis results, it was revealed that developing an instrument to assess the teachers' readiness, competence, and practices towards international large-scale assessment was required. At this stage, the questions were developed consisting of series of items for the purpose of gathering information from the respondents. The researcher used the 4 Likert scale questionnaire. This questionnaire has three (3) main portions.

Part I focuses on the extent readiness of science teachers towards international large-scale assessment in terms attainment of the objectives, participation of learners and teachers, utilization of different strategies, test results and utilization of learning materials with five (5) indicators for each variables considered. **Part II** focuses on the evaluation of

the level of science teachers' competence towards' international large-scale assessment in terms of content knowledge and pedagogy, learning environment, diversity of learning, curriculum and planning, assessment and reporting, professional development, and community linkages with five (5) indicators for each variables considered. **Part III** focuses on the extent practices of science teachers towards international large-scale assessment in terms of the following planning for assessment, collection of learning evidence, interpretation and communication of evidence, support provided to engages learners' actively, learning content assessed and application of assessment evidence with five (5) indicators considered. The 4 – Likert scale rating form is displayed in Table 2.

Table 7
Rating Description of Face Validation

Rating	Interval	Interpretation		
		Teachers' Readiness	Teachers' Competence	Teachers' Practices
4	3.28 – 4.00	Low Extent	Low Competent	Not at all Practice
3	2.52 – 3.27	Moderately Extent	Moderately Competent	Somewhat Practice
2	1.76 – 2.51	Extent	Competent	Mostly Practice
1	1.00 – 1.75	Highly Extent	Highly Competent	Completely Practice

1. Results of Expert Validation and Test of Reliability

Table 4
Face Validity of Survey Instruments

Indicators	WM	Interpretation
1. Clarity and Direction of Items	3.36	Highly Valid
2. Presentation and Organization of Items	3.45	Highly Valid
3. Suitability of Items	3.16	Highly Valid
4. Adequateness of the Content	3.67	Highly Valid
5. Attainment of the Purpose	3.77	Highly Valid
6. Objective	3.48	Highly Valid
7. Scale and Evaluation of Rating	3.55	Highly Valid
Overall	**3.44**	**Highly Valid**

The results of expert validation on the aspects of clarity and direction of items, presentation and organization of items, suitability of items, adequateness of the content, attainment of the purpose, objective, scale, and evaluation of rating was showed in Figure 4.

As observed, it was shown that the validation in the aspect of clarity and direction of items was 3.36 which interpreted as highly valid. This result indicates that the instrument was in accordance with the material aspects. This indicates that the vocabulary level, language & structure are at the conceptual level of the respondents. More so, the test directions and the items are written in a clear and understandable manner. Taking aside, the assessed presentation and organization of items aspects was gained 3.45 and interpreted as highly valid. This indicates that items are well presented and organized in a logical manner. Meanwhile, in the aspects of suitability of items was yield of 3.16 and interpreted as highly valid. This indicated that the items were appropriately presented the substance/content of the research. More so the questions/items are designed to determine what are supposed to be measured. In a way, adequateness of the content aspects, it was gleaned a 3.67 which interpreted as highly valid. This denotes that the number of the questions/items per domain/area were enough to answer the questions needed for the research. Paramount to the aspect of attainment of the purpose obtained a 3.77 and interpreted as highly valid. This stipulated that the instrument could fulfill the objectives needed for the research. Concomitantly, objectives aspect, the results acquired a 3.48 and interpreted as highly valid. This showed that each item question/indicator can answer or measure specific behavior/problem. Looking forward to the scale and evaluation of rating aspect draw a 3.55 and interpreted as highly valid. Deemed the overall results of face validation of experts showed that 3.44 and interpreted as highly valid. Therefore, the whole items of the instrument got very high validity and were declared valid or feasible.

Table 5
Test of Validity and Reliability of Survey Instrument

	Constructs	Validity		Reliability	
		V	Interpretation	α	Interpretation
TEACHERS'	Attainment of Objectives	0.93	Very high	0.92	Excellent
	Participation of Learners and Teachers	0.90	Very high	0.91	Excellent
	Utilization of Strategies	0.88	Very high	0.91	Excellent
	Test Results	0.85	Very high	0.91	Excellent
	Utilization of Instructional Materials	0.90	Very high	0.92	Excellent
	Overall	**0.89**	**Very high**	**0.92**	**Excellent**
TEACHERS' COMPETENCE	Content Knowledge and Pedagogy	0.88	Very high	0.97	Excellent
	Learning Environment	0.97	Very high	0.97	Excellent
	Diversity of Learning	0.93	Very high	0.96	Excellent
	Curriculum and Planning	0.95	Very high	0.97	Excellent
	Assessment and Reporting	0.88	Very high	0.97	Excellent
	Professional Development	0.87	Very high	0.97	Excellent
	Community Linkages	0.92	Very high	0.97	Excellent
	Overall	**0.91**	**Very high**	**0.97**	**Excellent**

TEACHERS'	Planning for Assessment	0.98	Very high	0.92	Excellent
	Collection of Learning Evidence	0.92	Very high	0.91	Excellent
	Interpretation and Communication of Evidence	0.93	Very high	0.91	Excellent
	Support Provided to Engage Students Actively	0.90	Very high	0.91	Excellent
	Learning Contents Assessed	0.88	Very high	0.91	Excellent
	Application of Assessment Evidence	0.87	Very high	0.92	Excellent
	Overall	**0.91**	**Very high**	**0.92**	**Excellent**

Table 5 illustrates the level where the validity and reliability is at a high level if the range of alpha values are between 0.87 to 0.98 as it is approaching the value of 1. On the other hand, if the alpha value is less than 0.6, this means that the level of reliability is low (Samosa & Dantay, 2023). The justification of the researcher conducting the pilot study is to examine the accuracy of the instrument because according to Navarro, Santos, & Corpuz (2019) there are three types of results obtained while conducting a pilot study. First, the data is reliable but invalid. Second, the data is valid but unreliable. Third, the data is valid and reliable. Yazon (2019) stated that the higher the value of reliability, the smaller the error found in the study instrument. Nevertheless, according to Suskie (2018) the validity of a study is not necessarily acceptable if the alpha value is high. Such problems could however be overcome by conducting the Test-Retest Reality analysis if the results of the pilot study were vague or the alpha values obtained were too low (de Guzman, & Adamos, 2015).

The results of the pilot study presented that the developed questionnaire for the survey done on the teachers' readiness, competence, and practices towards international large-scale was suitable based on test of validity and reliability.

Taking aside, the teachers' readiness towards international large-scale assessment survey – questionnaires established overall validity 0.89 were interpreted as very high and reliability of 0.92 described as excellent. Likewise, the sub variables of teacher readiness towards international large-scale established very high and excellent instrument includes the attainment of objectives (V = 0.93; α = 0.92), Participation of Learners and Teachers (V = 0.90; α = 0.91), Utilization of Strategies (V = 0.88; α = 0.91), Test Results (V = 0.85; α = 0.91), and Utilization of Instructional Materials (V = 0.90; α = 0.92).

Cognizantly, the teachers' competence towards international large-scale assessment survey – questionnaires established overall validity 0.91 were interpreted as very high and reliability of 0.97 described as excellent. Moreover, the sub variables of

teachers' competence towards international large-scale obtained very high validity and excellent reliability includes the content knowledge and pedagogy (V = 0.88; α = 0.87), learning environment (V = 0.97; α = 0.97), diversity of learning (V = 0.93; α = 0.96), curriculum and planning (V = 0.95; α = 0.97), assessment and reporting (V = 0.88; α = 0.97), Professional Development (V = 0.87; α = 0.97), and Community Linkages (V = 0.92; α = 0.97).

Emergently, the teachers' practices towards international large-scale assessment survey – questionnaires gained overall validity 0.91 were interpreted as very high and reliability of 0.92 described as excellent. Moreover, the sub variables of teachers' practices towards international large-scale obtained very high validity and excellent reliability includes planning for assessment. (V = 0.88; α = 0.97), collection of learning evidence (V = 0.92; α = 0.91), interpretation and communication of evidence (V = 0.93; α = 0.91), support provided to engage students actively (V = 0.90; α = 0.91), learning contents assessed (V = 0.88; α = 0.91), and application of assessment evidence (V = 0.87; α = 0.91).

Conclusions

Based on the results, it can be concluded that researcher involves the expert judgment to validate teachers' readiness, competence, and practices towards international large-scale assessment instrument. The content validity testing result with the Aiken's V formula of teachers' readiness, competence, and practices towards international large-scale assessment instrument shows that the instrument is suitable for use because it has been fulfilled aspects of clarity and direction of items, presentation and organization of items, suitability of items, adequateness of the content, attainment of the purpose, objective, scale, and evaluation of rating; the test of reliability of established excellent which was appropriate to be used to assess teachers' readiness, competence, and practices towards international large-scale assessment.

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APPENDIX

SURVEY QUESTIONNAIRE

The undersigned is presently conducting test of validity and reliability of the survey entitled "**SCIENCE TEACHERS' READINESS, COMPETENCE, AND PRACTICES TOWARDS INTERNATIONAL LARGE-SCALE ASSESSMENT.** Kindly answer all items sincerely and honestly. Rest assured, that all your answer will be treated with utmost confidentiality. Thank you very much.

(Optional)_____

School: (Optional)_____

PART I. EXTENT READINESS OF SCIENCE TEACHERS TOWARDS INTERNATIONAL LARGE-SCALE ASSESSMENT

Direction: Below are the statements that focuses on the extent readiness of science teachers towards international large-scale assessment. Kindly put a check mark (√) on the column that corresponds to your answer.

Rating	Interpretation
1	Low Extent
2	Moderately Extent
3	Extent
4	Highly Extent

No	**Attainment of Objectives** *As a teacher I can*	1	2	3	4
1	improve scientific literacy skills of the K to 12 learners following the framework of international large – scale assessments (PISA, TIMSS, and SEA- PLM).				
2	strengthen teacher's capability to teach and assess scientific literacy skills effectively.				
3	improve management and administration of the assessment aligned with the international large – scale assessments framework (PISA, & TIMSS).				
4	establish a school-based mentoring/learning partnership program thru SLAC.				
5	all K to 12 learners equipped with fundamental science skills and competencies needed for academic success in later key stages.				
No	**Participation of Learners and Teachers** *As a teacher I can*	**1**	**2**	**3**	**4**
1	learn through participating in decisions within a wide variety of educational activities and processes leading to meaningful impacts and outcomes in mathematical skills.				
2	be involved in monitoring and evaluating the scientific literacy program aligned with the international large – scale assessments (PISA, & TIMSS) by participation and its impacts.				
3	be enabled to participate through a variety of ways of expressing their views.				
4	learn about their right to participate voluntarily in decision making.				
5	have a say in shaping educational provisions in their setting and beyond of the international large – scale assessments framework program (PISA, & TIMSS).				
No	**Utilization of Strategies** *As a teacher I can*	**1**	**2**	**3**	**4**
1	build excellence in classroom practice in effective assessments.				
2	differentiate teaching to meet learners' different learning needs.				
3	build instructional leadership in international large – scale assessments framework (PISA, & TIMSS).				
4	embed a whole-school focus on international large – scale assessments framework (PISA, & TIMSS).				

5	engage parents and carers as partners in improving learners' competencies international large – scale assessments framework (PISA, & TIMSS).				
No	**Test Results** *As a teacher I can*	**1**	**2**	**3**	**4**
1	describe the status of the educational program.				
2	identify the knowledge and skills over which learners have (or do not have) mastery on the mathematical skills assessment.				
3	support judgments about the adequacy of observed performance in mathematical skills assessment.				
4	provide an argument about the success or failure of instructional content and strategies.				
5	reinforce the call for high academic standards and educational reform, and school accountability.				
No.	**Utilization of Instructional Materials** *As a teacher I can*	**1**	**2**	**3**	**4**
1	arouse and sustain the interest and attention of the learners.				
2	concrete concepts and ideas to promote meaningful learning in mathematical skills assessments.				
3	provide self-activities for independent learning.				
4	increase the quality of learning while decreasing the time spent				
5	make learning more permanent by providing rich experiences in mathematical skills assessment.				

PART II. LEVEL OF SCIENCE TEACHERS' COMPETENCE TOWARDS' INTERNATIONAL LARGE-SCALE ASSESSMENT

Direction: Below are the statements that focuses on the level of science teachers' competence towards' international large-scale assessment. Kindly put a check mark (√) on the column that corresponds to your answer.

Rating	Interpretation
1	Low Competent
2	Moderately Competent
3	Competent
4	Highly Competent

No	Content Knowledge and Pedagogy *As a teacher I can*	1	2	3	4
1	demonstrate content knowledge and its application within and/or across curriculum teaching areas.				
2	demonstrate an understanding of research - based knowledge and principles of teaching and learning.				
3	show skills in the positive use of ICT to facilitate the teaching and learning process.				
4	demonstrate knowledge of teaching strategies that promote literacy and numeracy skills.				
5	apply teaching strategies that develop critical and creative thinking, and/or other higher-order thinking skills.				
No	**Learning Environment** *As a teacher I can*	**1**	**2**	**3**	**4**
1	demonstrate knowledge of policies, guidelines and procedures that provide safe and secure learning environments.				
2	demonstrate understanding of learning environments that promote fairness, respect and care to encourage learning.				
3	demonstrate knowledge of positive and non-violent discipline in the management of learner behavior and managing classroom structure that engages learners, individually or in groups, in meaningful exploration, discovery and hands-on activities within the available physical learning environments.				
4	demonstrate understanding of supportive learning environments that nurture and inspire learner participation.				
5	demonstrate knowledge of learning environments that motivate learners to work productively by assuming responsibility for their own learning.				
No	**Diversity of Learning** *As a teacher I can*	**1**	**2**	**3**	**4**
1	demonstrate knowledge and understanding of differentiated teaching to suit the learners' gender, needs, strengths, interests and experiences.				
2	implement teaching strategies that are responsive to the learners' linguistic, cultural, socio-economic, and religious backgrounds.				
3	use strategies responsive to learners with disabilities, giftedness and talents.				
4	demonstrate understanding of the special educational needs of learners in difficult circumstances, including geographic isolation; chronic illness; displacement due to armed conflict, urban resettlement or disasters; child abuse and child labor practices.				

5	demonstrate knowledge of teaching strategies that are inclusive of learners from indigenous groups.				
No	**Curriculum and Planning** *As a teacher I can*	**1**	**2**	**3**	**4**
1	prepare developmentally sequenced teaching and learning processes to meet curriculum requirements.				
2	identify learning outcomes that are aligned with learning competencies.				
3	demonstrate knowledge of the implementation of relevant and responsive learning programs.				
4	seek advice concerning strategies that can enrich teaching practice.				
5	show skills in the selection, development, and use of a variety of teaching and learning resources, including ICT, to address learning goals.				
No	**Assessment and Reporting** *As a teacher I can*	**1**	**2**	**3**	**4**
1	demonstrate knowledge of the design, selection, organization and use of diagnostic, formative and summative assessment strategies consistent with curriculum requirements.				
2	demonstrate knowledge of monitoring and evaluation of learner progress and achievement using learner attainment data.				
3	demonstrate knowledge of providing timely, accurate and constructive feedback to improve learner performance.				
4	demonstrate familiarity with a range of strategies for communicating learner needs, progress, and achievement.				
5	demonstrate an understanding of the role of assessment data as feedback in teaching and learning practices and programs.				
No	**Professional Development** *As a teacher I can*	**1**	**2**	**3**	**4**
1	articulate a personal philosophy of teaching that is learner centered.				
2	demonstrate behaviors that uphold the dignity of teaching as a profession by exhibiting qualities such as caring attitude, respect, and integrity.				
3	seek opportunities to establish professional links with colleagues.				
4	demonstrate an understanding of how professional reflection and learning can be used to improve practice.				
5	demonstrate motivation to realize professional development goals based on the Philippine Professional Standards for Teachers.				

No	Community Linkages *As a teacher I can*	1	2	3	4
1	demonstrate an understanding of knowledge of learning environments that are responsive to community contexts.				
2	seek advice concerning strategies that build relationships with parents/guardians and the wider community.				
3	demonstrate awareness of existing laws and regulations that apply to the teaching profession and become familiar with the responsibilities specified in the code of ethics for professional teachers				
4	demonstrate knowledge and understanding of school policies and procedures to foster harmonious relationships with the wider school community.				
5	Learning best practices for a good relationship among school, home, and community.				

PART III. EXTENT PRACTICES OF SCIENCE TEACHERS TOWARDS INTERNATIONAL LARGE-SCALE ASSESSMENT

Direction: Below are the statements that focuses on the extent practices of science teachers towards international large-scale assessment. Kindly put a check mark (√) on the column that corresponds to your answer.

Rating	Interpretation
1	Not at all Practice
2	Somewhat Practice
3	Mostly Practice
4	Completely Practice

No.	Planning for Assessment *As a teacher I can*	1	2	3	4
1	share the expected learning outcomes to the learners so they are informed of what is expected on them.				
2	align the assessment tasks with the content standards, performance standards, most essential learning competencies, and specific learning objectives.				
3	consider the learning style and multiple intelligence of the learners in designing online assessments.				
4	collaborate with colleagues to come up with an assessment task that integrates the competencies of two or more learning areas.				
5	develop appropriate marking keys or rubrics to be used in the assessment task.				
No.	**Collection of Learning Evidence**	**1**	**2**	**3**	**4**

	As a teacher I can				
1	give pre-test to identify the learning needs of the learners before instruction and post-test to measure the learning gained after instruction.				
2	conduct plenty of formative assessments to prepare the learners for summative assessment.				
3	provide learners with mock exams so they can experience what is required for summative assessment.				
4	administer summative assessment at the end of each unit or chapter.				
5	use portfolio assessment or other forms of authentic assessments.				
No.	**Interpretation and Communication of Evidence** *As a teacher I can*	**1**	**2**	**3**	**4**
1	return scores and corrected outputs with appropriate feedback promptly.				
2	communicate the learner's strengths and weaknesses based on assessment results to the parents or guardians.				
3	discuss the assessment results and academic progress to the learners so they can reflect on their good as well as poor study habits.				
4	use learning management system (LMS) in releasing scores and grades so the learners and their parents/guardians have a quick access to the assessment results and can easily monitor them.				
5	use online learning platforms where the students can get assessment feedback in real time.				
No.	**Support Provided to Engage Students Actively** *As a teacher I can*	**1**	**2**	**3**	**4**
1	develop and assign tasks that are sufficiently flexible for students to tailor them to their own needs and interests.				
2	adjust assessment to develop learners' responsibility for their learning.				
3	give contingent, specific, and credible praise and feedback.				
4	develop and assign assessment tasks where the learners can work collaboratively with their peers.				
5	connect assessments with real-life scenarios.				
No	**Learning Contents Assessed** *As a teacher I can*	**1**	**2**	**3**	**4**
1	design summative assessment that covers the topic/s taught.				
2	design assessment tasks that are aligned with Most Essential Learning Competencies (MELCs) and learning objectives of the subject matter.				

3	provide a shortlist of possible topics and give the learners chance to select a topic for their essay or project.				
4	design assessment task that encompasses all learning domains (knowledge, skills, values).				
5	create an assessment task that measures interdisciplinary contents and competencies.				
No	**Application of Assessment Evidence** *As a teacher I can*	**1**	**2**	**3**	**4**
1	administer a parallel test to test the reliability of summative assessment scores (e.g., compare the result of pre-test and post-test).				
2	reflect on one's assessment practices using the assessment information gathered and feedback from the students.				
3	revise summative test based on test item analysis.				
4	analyze assessment information gathered before, during, and after instruction to understand each students' progress to date and to inform future instructional planning.				
5	record and report assessment result for school-level analysis, evaluation, and decision making.				

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DEVELOPMENT OF PROJECTILE MOTION VLOGS

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ABSTRACT

This study was conducted to develop instructional material in vlogs and present new insights to multi-sensory and multimedia learning, especially in the new normal and alternative education where teachers can be physically distant from the learners. Mayer's Cognitive Theory of Multimedia Learning was applied to anchor the study's foundation. Furthermore, the study also aimed to improve students' knowledge of projectile motion, which was identified as the least learned competency in the past three consecutive school years. Developmental research design was utilized, which followed the modified ADDIE (Analysis, Design, Development, Implementation, and Evaluation) Model in designing instructional materials. A standardized instrument, Evaluation Rating Sheet for Non-Print Materials, devised by the Department of Education- Learning Resources Management and Development System (LRMDS) to assure specific materials like vlogs, was utilized in this study. Quota sampling was employed to get 45 teachers in evaluating the projectile motion vlogs. Forty of them were Science teachers with three years and more in service and five ICT teachers. They were taken from the public junior and senior high schools within the Congressional District IB of Nueva Ecija. The projectile motion vlogs were evaluated positively and passed the content, instructional, and technical standards with very satisfactory means and above the passing rate scores which quality assured that the materials are ready to serve their purpose. However, the materials need to improve its accuracy and up-to-datedness quality and therefore need minor revisions before

implementing to the learners. Moreover, respondents commended the researcher's effort to promote Science learning engagingly.

Keywords: *Vlogs, Projectile Motion, Physics, Developmental Research, Instructional Video, Pedagogy, Innovation, Learning Material*

INTRODUCTION

The advent of technology in all levels of learning in the educational arena has dramatically transformed the teaching and learning process. This educational transformation has mostly become the key feature to continue education in the new normal during the pandemic where the spread of COVID 19 resulted to the restriction of traditional face-to-face instruction. Therefore, selecting an alternative to the teaching-learning delivery mode should be as effective and efficient as the preceding pedagogical approach.

Also, new media and globalization have significantly converted classrooms into something more appealing to today's generation or "Gen Z." As educators, it is essential to use current research to inform the many opportunities that can be offered to learners. One option in technology in education is the creation of instructional video lessons. Studies have shown that technology can enhance learning, and that video, specifically, can be a highly effective educational tool (Hsin & Cigas, 2013).

As far as this study is concerned, there are many instructional videos available throughout the internet that focused only on the lesson's serious presentation in bulk and from which very few studies are conducted to address mistakes and misconceptions in chunks and are not appropriately assessed and evaluated by experts. Therefore, to address the dilemma, education needs newer, more intense, multifaceted, and personalized perspectives, especially in teaching and learning topics considered to be least learned.

Video-blog records someone's experiences, thoughts, or opinions published online like Youtube, Facebook, and Tiktok, preferably (Cambridge Dictionary Online, n.d.). It is a spoken, asynchronous form of computer-mediated communication with a visual element (Frobenius, 2014), which has several types available throughout the internet, like instructional videos (Cristenson, 2011). Recently, vlogs were coined as "the new TV" (Buenaventura, 2015), in which the "vlogger" is a person who creates vlog content (Techterms,2011).

Vlogs can deliver learning in a most tangible way to learners and give them a self-paced approach and the time to watch and rewatch in their most convenient preference, which is previously unstudied. Vlogs have the potential to address issues of having a large class size, focus on students (Social Media and the Classroom, 2012), and attraction to the new breed of learners, and more (Kaptan & Timurlenk, 2012; Aysan,

2015). Likewise, the studies of Anil (2016) and Darmawan (2016) provided in-depth benefits in using vlogs in education. Notably, the studies concluded that vlogs: (a) had improved learner's learning performance; (b) showed learner's great interest and enthusiasm; (c) created an enjoyable, comfortable, and relaxed learning atmosphere; (d) reduced the level of learning anxiety reasonably; and (e) helped develop skills without pressure since it is a self-paced approach. However, the literature lacks strong evidence of selecting a topic, the procedure in developing the alternative, and the evaluation of vlogs by experts before the deployment of the study. Besides, choosing a topic to use in an intervention is important because it validates its effectiveness and efficiency.

Based on the consolidated fourth grading test results of Grade 9 learners for the past three years at School A, the topic of "Uniformly Accelerated Motion (UAM) in Horizontal and Vertical Dimensions of a Projectile" ranked top as least learned concept. Wherein, this is supported by the following studies claiming that the topic is challenging to deal with: (a) learners committed mistakes in solving projectile motion problems as identified by DBE (Mudau, 2014); (b) the PISA results recognizing Filipino learners with lack of scientific knowledge, skills, and processes (e.g. critical thinking, problem-solving skill, language proficiency, mathematical ability, and high vocabulary skill) (OECD, 2019; Tigere 2014; Grosser & Nel, 2013); and lastly (c) problems met by learners were not adequately addressed such as content, teachers, and environmental factors (Mudau, 2014). Therefore, the following issues should need to take a vigorous intervention to elevate the topic's learning. Moreover, this intervention should: maximize the role of a teacher who has a mastery in the subject; use as effective pedagogical approach to attract learners; excite students who are ready to learn and are skills-oriented; connect previous lessons to new where common mistakes in solving projectile are addressed (Aysan, 2015; Mudau, 2014).

Therefore, the researcher came up with the idea of bringing innovation to education. This study was conceptualized to elevate the least learned skill in Science-Projectile Motion and develop vlogs catering to instructional variation dilemmas. Meanwhile, the study only focused on the development and evaluation of vlogs in teaching projectile motion.

Research Questions

This study focused on the development and evaluation of teacher-made vlogs to improve the knowledge of students on Uniformly Accelerated Motion in Horizontal and Vertical Dimensions of a Projectile (Projectile Motion).

Specifically, the research sought to determine the following:

1. What are the notable considerations in selecting projectile motion as topic content;
2. How may the need for vlogs be analyzed;

3. How may projectile motion vlogs be designed and developed;
4. How may the experts evaluate the vlogs; and
5. What are the comments and suggestions of the experts for improvement?

METHODOLOGY

The developmental research design was employed to provide a suitable research flow and generate valid results. This aims to design, develop, and evaluate learning resources, processes, and products that must meet the criteria to be considered effective and efficient so that they can facilitate instruction (Ibrahim, 2016). Moreover, Ibrahim (2016) analyzed the four fundamental phases of developmental research related to the instructional design model in which the study was aligned. These phases were (1) Analysis, (2) Design, (3) Development, and (4) Evaluation in which Type II or Reconstructive Studies/ Model Development and Technique Development were chosen to deliver the alternative better. Hence, modified ADDIE model was employed.

The study was divided into four phases. These were: (1) Phase I: Analysis for the Need of Projectile Motion Vlogs, this first phase served as the analysis of choosing vlogs as an instructional intervention in teaching a least learned concept (Projectile Motion). This was carried out to determine the purpose of developing projectile motion vlogs and for whom it was intended. This phase was done through a thorough study of literature; (2) Phase II: Designing of Projectile Motion Vlogs , the second phase was based on Phase I (Analysis). This was the incorporation of the different principles justified in the literature review, aiming to outline what must be considered and catered to such as the DBE's recommendation in addressing the mistakes and misconceptions (2011). Vlogs' design also followed the 7 E's DOST Star Lesson Plan Exemplar to ensure that instruction flow was developmentally appropriate; (3) Phase III: Development of Projectile Motion Vlogs, at this stage, the development of the projectile motion vlogs relied on the designs already created. Planning and writing of lessons with specific learning competencies as dialogues were carried out. Filming, editing, and revising of the said instructional vlogs were carefully crafted. The making of a YouTube account and uploading of the alternative was also in this phase; and (4) Phase IV: Evaluation of Projectile Motion Vlogs by Experts, the last phase followed after the vlogs' development. Experts assessed whether the projectile motion vlogs achieve their purpose, meet the criteria to be considered effective and efficient, and decent to use through the adopted instrument- Evaluation Rating Sheet for Non-Print Materials. The improvement based on the results and suggestions of experts were also catered to in this phase.

Various research locales were identified as the place to conduct the study. These were School A and School B in Licab and other schools in the municipalities of Nueva Ecija such as School C and School D in Quezon; School E and School F in Aliaga, and School G, School H, and School I in Zaragoza. These schools fall under the locale cluster of Congressional District IB. Moreover, School A, a large school located at Poblacion

Norte in Licab, was the hotspot in the generation of test results identifying the projectile motion as the least learned concept for three (3) consecutive school years. Furthermore, the schools mentioned above also considered the topic in which students performed worst upon pre-survey conduct. In means, the identified schools were suitable and reliable to achieve the purpose of the study. The research locale was also selected purposively and conveniently since the COVID-19 pandemic is still around. To observe and follow health protocols, the municipalities surrounded within the bounds of Licab and their public high schools, as stated above, were chosen to achieve a quota of 45 respondents.

In the study, the population was divided into two major groups-Junior and Senior High School Science Teachers. They were teaching Science for at least three years. Furthermore, a 60% proportion was selected to get a sample from each group. As a result, 27 Junior High School and 13 Senior High School Science Teachers with 40 teacher-experts were identified as respondents. Same processes were also applied in selecting the five (5) ICT teacher-experts to participate in the study. Therefore, a quota of 45 experts was surveyed purposively and conveniently as respondents in the study to achieve its main objectives- to develop and evaluate projectile motion vlogs.

The primary instrument employed in the study was the use of the Survey Questionnaire. As defined by the author, the questionnaire consists of a series of questions that serve as a quick and efficient way of gathering a large amount of data from the respondents (Macleod, 2018). Meanwhile, the employed instrument was further divided into two sections: (1) the evaluation of learning resources adopted from the DepEd-LRMDS; and (2) the comments and suggestions of experts on the learning resource.

The Department of Education's Guidelines and Processes for Learning Resource Management and Development System (LRDMS) Assessment and Evaluation aims to identify quality assured learning resources. Therefore, they developed high-quality assessment and evaluation tools for different learning resources to ensure this. This convinced the researcher to use the LRMDS Assessment and Evaluation System tool since the study shared the same objective and principle. Among the assessment and evaluation systems, the Evaluation for Non- Print Materials was selected and adopted as the study's main instrument since the characteristics of educational vlogs satisfied the said evaluation tool, especially the type or kind of material developed. Furthermore, the evaluation rating sheet for non-print materials was divided into the following four quality factors: (a) Factor A: Content Quality - consists of 10-item descriptors to determine the materials' ability to display appropriate and organize mastery of the lesson and promote understanding of the topic being discussed; (b) Factor B: Instructional Quality - consists of 10-item descriptors to determine the materials' ability to display purpose as pedagogical innovation for a classroom setting. It should be learner-friendly; (c) Factor C: Technical Quality - consists of 13-item descriptors to determine the materials' ability to display good visual and audio presentations that enhance the learning of the topic and make it appealing to learners; and (d) Factor D: Accuracy and Up-to-datedness

Information Quality - consists of 4-item conditions to determine the materials' ability to display current, accurate, and error-free content presentation.

After the analysis, design, and development phases of projectile motion vlogs, and when the thesis adviser and the panel members' consultation and recommendation were established, the evaluation phase was performed to start the data gathering procedures. Upon the Graduate School's approval to deploy the link of the survey questionnaire in Google form, a letter of consent to the respondents' school heads was sent priorly.

After the respondents were selected as experts to evaluate the learning resource or educational vlogs, a link of the survey questionnaire via Google Form was sent thru their FB Messenger or Personal E-mail Address to observe less physical contact because of the pandemic. When a quota of 45 respondents was surveyed, raw results were generated rapidly and the survey was stopped.

Raw results were treated using the appropriate statistical treatment to provide the exact data needed for the study. For qualitative data, they were convened into themes for each transcript. The data were presented and organized in tabular presentations for the easy development of the study's conclusion and recommendation.

RESULTS

Notable Considerations in Selecting Projectile Motion as Topic Content

Projectile motion is a study where objects or bodies are projected through a gravitational ground and exist in horizontal and vertical components or dimensions. In the Philippine education, this topic is taught in Grade 9 under the K to 12 curriculum. However, based on the test results, this topic ranked first (1st) as the least learned concept having mean percentage score (MPS) of more than ten points below the passing rate for three consecutive school years (School A, 2016-2019).

Table 1.
Test Results for Three Consecutive School Years

Year	N	Mean	MPL	MPS	SD
2016-2017	346	19.73	39.46	40.67	11.57
2017-2018	357	19.00	38.01	39.25	10.14
2018-2019	378	19.57	39.13	40.35	9.66

Analysis of the Need for Vlogs

Table 2.
Literature Analysis of the Need for Vlogs

Theme	Percentage

1. Benefits of Using Vlogs in Learning a Topic (Data Reportal, 2020; Kemp, 2020; Anil, 2016; and Social Media and the Classroom 2016)	23.81
2. Pedagogical Improvisation and Innovation (Kaptan & Timurlenk, 2012; Social Media and the Classroom, 2012; and Mayer, 2003)	14.29
3. Statistics of Penetration to Social Media (Data Reportal, 2020; Kemp, 2020; and Maslanka, 2017)	14.29
4. Trends of Using Technology in Education (Cuevas, 2017; Aysan, 2015; UK Essays, 2015; Hsin & Cigas, 2013; and Ramey, 2013)	23.81
5. Nature and Characteristics of the Today's Learners (Perez, 2020; Domingo, 2018; and Cuevas, 2017)	14.29
6. Impacts of COVID-19 Pandemic to Education (Li & Lalani, 2020; & Malipot, 2020)	9.52
Total	**100**

Many studies led out for a fresh and learner-friendly approach in education, as the table above presents. The data were computed using percentage. Twenty-one foreign and local literature were established to explain why the researcher chose vlogs as an innovation to develop.

The literature reviews show positive feedback on the benefits of using vlogs in education (23.81%), such as they had improved the academic performance of learners with great interest and enthusiasm in an enjoyable, comfortable, and relaxed atmosphere. It was supported that using technology (23.81 %) provides new opportunities in teaching and learning a topic effectively. Especially now, a wide range of learners can be reached and helped by vlogs since they have many penetrations to social media (14.29 %). Also, vlogs are one step away from teachers' improvisation and innovation (14.29 %) to attract, prepare, maintain, and retain high-quality education. Hence, bigger problems such as learners' difficulties and loss of interest in understanding the lesson, and background, needs, characteristics, and background (14.29 %) could be catered to. Moreover, vlogs were applicable during the pandemic or alternative delivery mode (ADM), where teachers are physically distant from learners (9.52 %).

Design and Development of Projectile Motion Vlogs

The vlogs' design followed different principles justified in the literature review, aiming to outline what must be considered and catered to. The DBE's recommendation in addressing the mistakes and misconceptions (2011) become the salient feature of the educational vlogs. The said output also followed the 7 E's DOST Star Lesson Plan Exemplar to make sure the flow of instruction was developmentally appropriate.

Moreover, the 7 E's of Instructional Cycle was crafted by DOST Project Star to ensure the effective learning of vital concepts. These "E's" are elicit, engage, explore, explain, elaborate, evaluate, and explain and can be combined or in any order depending

on the lesson's need and background. Hence, the researcher ensured that self-made vlogs were able to achieve their purposes and objectives.

In developing projectile motion vlogs, determining the material resources to be included became one priority. In this case, the material is taken from the learning competency and learner's material of K to 12 Grade 9 Science. Vlogs are made into several parts, as suggested by Mayer's Multimedia Principle, to process the learning of the topic mentally. These are descriptors of motion, Horizontal Dimension of Uniformly Accelerated Motion, Vertical Dimension of Uniformly Accelerated Motion or Free Fall Concept, Projectile Motion (Motion in Two Dimensions), Relationship Between the Launched Angle and the Height, the Range, and the Time of Flight of a Projectile, and Impulse and Momentum.

Notably, the vlogs required a movie editing application like iMovie. iMovie is a video/movie editing tool consisting of images, transitions, animations, and audios organized to make a whole video. With its unique features, this application was used to present vlog contents by combining images, presentations, sounds, and attractive designs so that learners can enjoy watching while learning the concept. Another tool is Adobe Premiere Pro 2020, which was used to create the intro of the vlogs. iPhone 6 and an ordinary headset with a built-in microphone were used to record video narration. Lastly, the keynote was used to create an interactive slide presentation. These tools helped the researcher to achieve his purpose to develop and design vlogs.

Furthermore, scriptwriting was done to make the creation of learning vlogs more focused. Through writing of scripts, important details are valued. Also, scripts ensure a smooth flow presentation of the lesson.

The study also provided a strong belief that teachers can be creative using resources that are already available. However, since the resources were not that advanced, the audio quality was not good in some vlogs due to reasonable and inevitable noises such as rain and barking of dogs. Also, the researcher could not control the time of each vlog due to the difficulty of the topic. Some vlogs lasted for 10 minutes, and some reached 20 minutes. However, the topics were evenly divided into subtopics so learners who have limited attention span and space can comprehend and mentally process bulky topics, as Mayer advised. Mayer's multimedia principle, in which the study is anchored, was used to develop vlogs so that proper images, words, and animations can work together to log in entirely in learners' minds and link them from their experiences or prior knowledge. Thus, making the learning meaningful and relevant is a must.

Lastly, after the vlogs were produced, the uploading of contents on YouTube will follow (YT link: https://www.youtube.com/channel/UC_xozCpA1jEmnYGfoINjpQ).

Evaluation of Vlogs

The projectile motion vlogs are evaluated in four dimensions or qualities- content, instructional, technical, and accuracy and up-to datedness information. As explained by Tan (2019), proper evaluation of learning materials will result to quality learning. Below are the results of the evaluation of projectile motion vlogs:

Table 3.
Results of Content Quality

Factors	Weighted Mean	Interpretation
1. Content is consistent with topics/skills found in the DepEd Learning Competencies for the subject and grade/year level it was intended.	3.64	Very Satisfactory
2. Concepts developed contribute to enrichment, reinforcement, or mastery of the identified learning objectives.	3.58	Very Satisfactory
3. Content is accurate.	3.53	Very Satisfactory
4. Content is up to date.	3.56	Very Satisfactory
5. Content is logically developed and organized.	3.51	Very Satisfactory
6. Content is free from cultural, gender, racial, or ethnic bias.	3.53	Very Satisfactory
7.Content stimulates and promotes critical thinking.	3.58	Very Satisfactory
8. Content is relevant to real-life situations.	3.58	Very Satisfactory
9. Language (including vocabulary) is appropriate to the target user level.	3.53	Very Satisfactory
10. Content promotes positive values that support formative growth.	3.58	Very Satisfactory
General WM **Total Points**	**3.56** **35.62**	**Very Satisfactory**

Note: Resource must score at least 30 points out of a maximum 40 points to pass this criterion. Please put a check mark on the appropriate box

☒ Passed
☐ Failed

The data reveals a very satisfactory weighted mean of 3.56 in the criterion. This means that the teacher-evaluators find the projectile motion vlogs qualified in terms of their content quality. Hence, 35.62 total score was garnered which is above the minimum points to pass the criterion.

Prominently, Factor 1, “Content is consistent with topics/skills found in the DepEd Learning Competencies for the subject and grade/year level it was intended,” yielded the highest weighted mean of 3.64, while Factor 5, “Content is logically developed and organized,” got the lowest weighted mean of 3.51. Both of these factors are interpreted as very satisfactory.

Meanwhile, Factor 2, “Concepts develop contribute to enrichment, reinforcement, or mastery of the identified learning objectives,” Factor 7 “Content stimulates and promotes critical thinking,” Factor 8, “Content is relevant to real-life situations,” and Factor 10, “Content promotes positive values that support formative growth” top the second spot.

Table 4.
Results of Instructional Quality

Factors	Weighted Mean	Interpretation
1. Purpose of the material is well defined.	3.51	Very Satisfactory
2. Material achieved its defined purpose.	3.60	Very Satisfactory
3. Content is accurate/ Learning Objectives are clearly stated and measurable.	3.53	Very Satisfactory
4. Level of difficulty is appropriate for the intended target user.	3.51	Very Satisfactory
5. Graphics/colors/sounds are used for appropriate instructional reasons.	3.42	Satisfactory
6. Material is enjoyable, stimulating, challenging, and engaging.	3.53	Very Satisfactory
7. Material effectively stimulates creativity of target user.	3.51	Very Satisfactory
8. Feedback on target user’s responses is effectively employed.	3.51	Very Satisfactory
9. Target user can control the rate and sequence of presentation and review.	3.51	Very Satisfactory
10. Instruction is integrated with target user’s previous experience.	3.53	Very Satisfactory
General WM **Total Points**	**3.52** **35.18**	**Very Satisfactory**
Note: Resource must score at least 30 points out of a maximum 40 points to pass this criterion. Please put a check mark on the appropriate box	☒ Passed ☐ Failed	

The data reveals a very satisfactory weighted mean of 3.52 in the criterion. This means that teacher-evaluators find the projectile motion vlogs qualified in terms of their

instructional quality. Hence, 35.18 total score was garnered which is above the minimum points to pass the criterion.

Teacher-made vlogs achieved its defined purpose (Factor 2) yielded a weighted mean of 3.60. However, Factor 5, “Graphics/colors/sounds are used for appropriate instructional reasons,” must be given more attention since it is the lowest among other factors with a mean of 3.42. Though, both factors are interpreted as very satisfactory.

Meanwhile, Factor 3 (Content is accurate/Learning objectives are clearly stated.), Factor 6 (Material is enjoyable, stimulating, challenging, and engaging.), and Factor 10 (Instruction is integrated with target user’s previous experience) rank second.

Table 5.
Results of Technical Quality

Factors	Weighted Mean	Interpretation
1. Audio enhances understanding of the concept	3.40	Satisfactory
2. Speech and narration (correct pacing, intonation, and pronunciation) is clear and can be easily understood.	3.47	Satisfactory
3. There is complete synchronization of audio with the visuals, if any.	3.38	Satisfactory
4. Music and sound effects are appropriate and effective for instructional purposes.	3.44	Satisfactory
5. Screen displays (text) are uncluttered, easy to read, and aesthetically pleasing.	3.47	Satisfactory
6. Visual presentations (non-text) are clear and easy to interpret.	3.51	Very Satisfactory
7. Visuals sustain interest and do not distract user’s attention.	3.49	Satisfactory
8. Visuals provide accurate representation of the concept discussed.	3.40	Satisfactory
9. The user support materials (if any) are effective.	3.44	Satisfactory
10. The design allows the target user to navigate freely through the material.	3.42	Satisfactory
11. The material can easily and independently be used.	3.49	Satisfactory
12. The material will run using minimum system requirements.	3.44	Satisfactory
13. The program is free form technical problems.	3.40	Satisfactory
General WM	**3.44**	**Satisfactory**
Total Points	**44.76**	

Note: Resource must score at least 30 points out of a maximum 40 points to pass this criterion. Please put a check mark on the appropriate box	☒ Passed ☐ Failed

The data present that the study's learning material passed the technical quality standards with 44.76 total points that is above the given score. Also, a satisfactory rating of 3.44 was garnered where Factor 6, “Visual presentations (non-text) are clear and easy to interpret,” yielded the highest mean of 3.60 and interpreted as very satisfactory; and Factor 3, “There is complete synchronization of audio with the visuals, if any,” got the lowest mean of 3.38.

Meanwhile, Factor 7 (Visual sustain interest and do not distract user’s attention), and Factor 11 (The material can easily and independently be used) top the second spot.

Table 6.
Results of Accuracy and Up-to-Date Information Quality

Factors	Weighted Mean	Interpretation
1. Conceptual errors.	3.42	Present but with minor revisions
2. Factual errors.	3.47	Present but with minor revisions
3. Grammatical and/or typographical errors.	3.47	Present but with minor revisions
4. Other errors (i.e., computational errors, obsolete information, errors in the visuals, etc.)	3.60	Not Present
General WM **Total Points**	**3.49** **13.96**	**Present but with minor revisions**
Note: Resource must score at least 16 points out of a maximum 16 points to pass this criterion. Please put a check mark on the appropriate box	☐ Passed ☒ Failed	

Accuracy and up-to-datedness information and its determining factors are shown in the table where 3.49 mean was achieved. A failing mark with 13.96 score that is below the perfect score (16) was determined.

The teacher-evaluators were satisfied that Factor 4, “Other errors (i.e., computational errors, obsolete information, errors in the visuals, etc.),” was not traced throughout the vlogs and garnered the highest mean of 3.60. Meanwhile, Factor 1, “Conceptual errors” got the lowest mean of 3.42.

Moreover, Factor 2 (Factual Errors) and Factor 3 (Grammatical and/or typographical errors) garner the same mean of 3.47 and take the second spot.

Comments and Suggestions for Improvement.

The respondents' comments and suggestions are arranged into five (5) themes. These comments and suggestions are aimed to improve better the study and the output of the study itself.

Table 7.
Comments and Suggestions of Respondents for Improvement

Theme	Percentage
1. No comment	53.33
2. Technicality Issues	17.78
3. Context and Concepts Improvement	6.67
4. Positive Review	15.56
5. Impact to Learners	6.67
Total	**100**

Among the comments and suggestions, the highest percentage is "No Comment," with a 53.33% rate. Meanwhile, 17.78% of the response encouraged the researcher to improve the materials' technical issues such as audio-video narration and editing. Respondents also gave positive reviews on the researcher's effort to promote Science learning in an appealing manner, which has a percentage of 15.56%. Lastly, both context and concept improvements and impact to learners yielded the same rate of 6.67%

DISCUSSION

Notable Considerations in Selecting Projectile Motion as Topic Content

The test results for three consecutive school years identified that projectile motion is the least learned topic that requires major intervention. It also reveals that learners found the topic difficult because they committed mistakes in answering projectile motion problems and did not have enough Science processes and skills to comprehend such advanced lessons.

Despite pre-requisite topics learned from previous grade levels, learners still find it difficult. This difficulty is due to the common mistakes committed to solving projectile motion problems identified by the Department of Basic Education (Mudau, 2014). These mistakes were identified from the learners' responses from 2008-2010. Among these mistakes were: using inappropriate sign conventions, solving without understanding the vertical and horizontal components, and learning without application of the topic in real-life situations.

The 2019 PISA Results interpreted that Filipino Science learners cannot go on higher Science education because they lacked fundamentals. These fundamentals are skills and expected to help the learners in learning projectile motion. Hence, Mudau (2017) and Tigere (2014) elaborated on the significance of critical thinking, mathematical ability, vocabulary, and many more for this topic. Therefore, learners without these skills may find the topic difficult and commit mistakes eventually. Likewise, the need to acquire or reacquire the said skills is advisable (Bhakti et al., 2019; Nizoloman, 2013; Grosser & Nel, 2013; Cohen, 2012; Setati, 2011).

As a result, educators are encouraged to double their effort to address these dilemmas and to further increase the knowledge of projectile motion among learners. Therefore, these understandings convinced the researcher that projectile motion is the best choice to select as the vlog content.

Analysis of the Need for Vlogs

Vlogs, as defined, are records of thoughts, experiences, and opinions that vloggers or content creators filmed and published on the internet (Frobenius, 2014; Christensson, 2011; & Buenaventura, 2015). These materials can relate and deliver information that is most tangible to learners.

The items or indicators “benefits of vlogs in learning a topic” and “trends in using technology in education” top the statistics. This means incorporating new opportunities in education through technologies like the materials is highly encouraged (Ramey, 2013). Specifically, Anil (2016) and Darmawan (2016) pointed out that vlogs greatly improved the learning of a topic with great interest and enthusiasm in an enjoyable, comfortable, and relaxed learning atmosphere. Moreover, the use of new technologies in education effectively taught the new breed of learners (Aysan, 2015; & Hsin & Cigas, 2013).

Besides these, millions of learners worldwide are into vlogging sites (YouTube, Facebook, TikTok, etc.). Therefore, a wide range of learners who are experiencing difficulty in learning a topic could be reached and helped if teachers would upload educational content (Data Reportal, 2020; Kemp, 2020; & Maslanka, 2017). Thus, the “statistics of penetration to social media,” together with the “nature and characteristics of today’s learners” and the “pedagogical improvisation and innovation,” rank second. This connotes that teachers are urged to reinvent their pedagogical approaches from traditional to modern methods to keep on track with their learners’ needs and interests (Kaptan & Timurlenk, 2012; Perez, 2020; & Cuevas, 2017) especially the learners of today who are very expressive and entitled about themselves (Domingo, 2018).

To attract learners and produce and maintain high-quality teaching, educators also need to vary instruction and incorporate as many senses as possible since the multisensory approach effectively facilitates learning retention (Social Media and the

Classroom, 2012; & Mayer, 2003). Hence, vlogs can also help the teachers be creative, innovative, and updated on their teaching styles and skills, especially in teaching the least learned topics.

Since vlogs were uploaded on social media (YouTube), learners could learn a topic without limitations because they would not mind class performance. Other issues such as the convenience of learners in learning a lesson are catered since they have time to watch and rewatch the topic in which classroom setting discussion cannot offer. However, teachers are encouraged to provide soft copies in flask disks or CDs to modular or offline learners since they have no means for online-distance education.

Lastly, a more difficult situation appeared when the COVID-19 pandemic affects education and the need to reinvent pedagogies that are as effective as the preceding ones become prominent. By uploading on YouTube and saving on flask disks, vlogs are fitted for distance learning since teachers and learners are geographically distant (Li and Lalani, 2020; & Malipot, 2020). Therefore, no doubt that the need to develop a powerful technique to improve the learning of the least learned topics is highly encouraged. The researcher believes that this kind of learning materials in education will be helpful due to its overflowing benefits.

Design and Development of Projectile Motion Vlogs

The design and development of projectile motion vlogs followed the suggestion of DBE on how to minimize the learners' mistakes in solving projectile problems. The vlogs utilized 7 E's DOST Lesson Plan Exemplar format to ensure a developmentally sequenced topic presentation. Akanwa and Ovute (2014) pointed out that this model can impact learners' achievement and interest since the activities are towards investigation. The study also ensured that teachers could be creative in their pedagogy using materials that are already available. The researcher used only a smartphone and laptop to record audio-video narration, make a presentation and edit the whole vlogs. Vlogs were divided into several parts, and the study applied the multimedia principle so that learners could mentally process the learning of the topic, as suggested by Mayer's CTML, in which the study was anchored.

Evaluation of Vlogs

Content Quality

The material passed the content quality with a very satisfactory rating respectively with scores above the passing rate. This means that the projectile motion vlogs are congruent and consistent with the learning competencies as mandated in the curriculum. According to Hamidova and Ganiyeva (2020), learning objectives must be taken into account in selecting a content because the right content will help to achieve goals. This view of Hamidova and Ganiyeva supported the study of Dela Cruz (2015), which stated

that materials must have relevance with the objectives of the lesson. In which the vlogs provide, therefore, it can be used as support system to achieve the competencies of the lesson.

Also, the content is suitable for learners since it can provide holistic growth. Hence, the researcher is encouraged to plan, manage, and implement a more developmentally sequenced vlog to improve the learning competencies. Likewise, school heads and administrators are encouraged to continuously improve and strengthen their teachers' pedagogy to ensure quality teaching (Friesen et al., 2015).

Moreover, content quality is an essential aspect in selecting instructional material (IM) since it gives the idea that the materials used for instruction must be aligned to curriculum standards and has an appropriate depth of knowledge. So, teachers are encouraged to select materials that possess this quality. This notion is congruent to the study of Pourhosein and Sabouri (2016) that a highly motivated and well-trained teacher can select appropriate materials and activities for their learners. Also, IMs should engage and respect the learners' needs, interest, and nature (Bugler et al., 2017).

Instructional Quality

The material passed the instructional quality with a very satisfactory rating respectively with scores above the passing rate. This tells that the respondents have a positive perception to the created vlogs. This also implies that if the teacher would incorporate the material to the student, it could meet the curriculum requirements and attract learners if visuals, graphics, and sounds are good. Teachers, assisted by school leaders, are therefore encouraged to attend ICT seminars and workshops to enhance their teaching using technologies in education and solve the ICT skill gap during the pandemic (Montoya, 2020).

According to Bugler et al. (2017), it is important that the learning materials can engage and motivate the learners so that they can relate the lessons in real-life situations. Since the respondents find the projectile motion vlogs engaging, the notion recommended by Bugler et al. is satisfied.

Likewise, Martin and Bolliger (2018) highlighted that if students are well engaged, students are satisfied and motivated. Also, they noted that students' engagement can reduce the sense of isolation and further improve the students' performance especially now where everything is online. Therefore, a material that is easy to use, learner-friendly, and can support learners' learning progress is a good sign that instructional quality is achieved (Bugler et al., 2017).

Technical Quality

The material passed the instructional quality with a satisfactory rating respectively with scores above the passing rate. This reveals that the projectile motion vlogs can attract learning and provide independent learning. As suggested by Tomita (2017), learning materials should be displayed in various forms so that learners with diverse visual needs are also catered. However, the vlogs can be improved more by providing clear and precise sound narration to accompany the good visual presentations.

Bugler et al. (2017) and El Mhoti (2013) reiterated that a good instructional material has a strong visual appeal with appropriate and suitable graphics and aesthetics that could support and enhance learners' assimilation of knowledge. Hence, Olurinola (2015) specified that colors have a positive impact on the learners' attention and retention. Aspen Institute (2018) also pointed out that high-quality instructional materials significantly impact learners' academic performance. Moreover, Bugler et al. (2017) stated that visual appeal is an important attribute to engage the learner more.

Accuracy and Up-to-Date Information Quality

Respondents advised improving the materials' accuracy and up-to-datedness information since it did not pass the criterion or achieve the perfect score of 16. It means that in some parts of the projectile motion vlogs, errors are seen, and minor revisions are needed to pass the criterion since this was the first attempt of the researcher to produce this kind of concept.

Moreover, presenting the topic more in a contextualized approach is encouraged. This is also the respondents' suggestion to improve the output of the study and pass the criterion. This means that maybe the vocabulary used was not ideal for the learners as perceived by the evaluators. This perception might be due to lengthy explanations. Also, the created vlogs may contain unclear illustration or obsolete information. Therefore, the researcher must double check where these errors are and provide action for so that this criterion would be satisfied.

Also, as advised by the DEPEDLRMDS from which the tool was adopted, materials that do not pass in any criterion may be subject to modification and may follow LRMDS Development and Production Quality Assurance Processes. This concludes that even the material passed the content, instructional, and technical qualities, it is advisable that accuracy and up-to-datedness information are still addressed. Likewise, quality assured materials do not mean perfect material (Pitsoe & Maila, 2014). Since it is an important criterion, the researcher would look into this to provide an error-free learning material before implementing it (Kanori et al., 2020). Hence, Chinwendu (2014) explained that teaching materials with lexicosyntax errors must be fixed so that errors would not result to more errors. Moreover, proper evaluation of learning materials will lead to quality learning (Tan, 2019).

Comments and Suggestions for Improvement

The data reveal that the respondents encouraged the researcher to improve the materials' technical aspects such as audio-video narration and editing. Hence, this suggests that teachers are fully aware that graphics and aesthetics can impact learning (Bugler et al., 2017).

The researcher's effort to promote Science learning in an appealing manner with was seen by the respondents and implies that they have positive outlook that the researcher will be able to achieve his purpose of improving the knowledge of the least learned and incorporating the use of vlogs as new educational video material. This also denotes that respondents believed that projectile motion vlogs could significantly impact the learners if minor concerns were catered to, such as contextualizing the lessons. It means that if errors and inconsistencies are supplied it will not result to more errors (Chinwendu, 2014). Also as confirmed by Kanori et al. (2020), an error-free material guarantees high quality material. In terms of contextualizing the content, Tolbert (2016) concluded that contextualizing lessons especially Science activities provide a more meaningful learners' engagement in Science learning experience.

Furthermore, this concludes that the material is also relevant during the pandemic or in alternative delivery mode (ADM) where teaching and learning process is mostly done through online. Meanwhile, it can be deduced that "No Comment" may be considered as null data. However, it also affirms that more than half of the respondents refused to comment and suggest and let the evaluation results speak for themselves.

Conclusions

Based on the findings of the study, the following conclusions were drawn:

1. The projectile motion is a least learned competency identified from the test results for three consecutive school years and needed to be improved to address common mistakes committed by the learner and develop scientific process skills. Hence, it was selected as the topic content of the study;

2. Education needs versatile and potent tools to address major educational issues of today. There are records of the benefits of using vlogs in education, and this kind of technology plays a vital role in today's educational arena. Moreover, vlogs provide the teachers with a capacity to improve and innovate pedagogies, to target learners' needs, characteristics, and backgrounds, such as their convenience in learning a lesson due to class size and limited school time. Especially, a wide range of learners has direct penetration to social media. Lastly, the drastic change brought by the COVID-19 pandemic, where distance learning is the only applicable strategy, was taken into account;

3. The projectile motion vlogs utilized simple tools such as a smartphone and laptop for audio-video recording and editing. It followed the DBE's suggestion on how teachers can address the common mistakes in solving projectile motion problems. It also incorporated the 7 E's DOST Lesson Plan Exemplar to provide a developmentally sequenced presentation of topics. Moreover, vlogs were split into parts and applied the multimedia principle of Mayer to allow the learners mentally process the acquisition of the topic;

4. The evaluation revealed that the materials are quality assured in terms of content, instructional, and technical qualities with scores that exceeded the passing rate. However, before implementing the vlogs to the learners, minor revisions or modifications must be catered to since respondents have seen several errors in the accuracy and up-to-datedness information in some parts of the vlogs; and

5. Respondents commended the researcher's effort to promote Science education creatively. However, they suggested enhancing audio-video quality, focusing better on filming, and editing, adding engaging pictures and animations, and incorporating knowledge through contextualization and conceptualization to improve the material's features further. Moreover, more than half of the respondents refused to give comments and suggestions and let the study results speak for themselves.

Recommendations

Based on conclusions of the study, the following recommendations are offered:

1. Teachers are encouraged to review, focus, and improve projectile motion or other learning competencies in Science and any subject area that are considered least learned. They may employ the outputs of this study or devise a different instructional approach to provide a variety of learning materials and strategies;

2. Teachers, who believe in the potency of the outputs of the study, may utilize it and advise to improve the audio-video quality of the material by using equipment, gadgets, and applications intended for the creation of vlogs;

3. The projectile motion vlogs are suggested for modification since there were errors seen on the accuracy and up-to-datedness information that require minor revisions using the LRMDS Development and Production Quality Assurance Processes or any modification approach before undergoing implementation;

4. Teaching strategies need to be diversified to address the learning needs and problems encountered by learners. Also, to enhance the learning of Science concepts and thus improve the learners' academic performance;

5. Learners are also recommended to create their learning vlogs to motivationally support the education of topics that seem to be difficult for them, and also to evaluate how much concepts and skills are retained in their mind since vlog is versatile;

6. School leaders are advised to provide in-service training to teachers so that they can gain new insights and trends in teaching Science, primarily pedagogical approaches that are applicable in the new normal of education where teachers are geographically distant from the learners;

7. Curriculum experts and planners, especially module writers, are prompt to incorporate the use of vlogs and other instructional videos as a tool for empowering learners' learning experience and capacity since these are accepted and evaluated positively by the respondents; and

8. Lastly, the future researchers are highly encouraged to evaluate the outputs with other experts such as curriculum and instructional experts, and test whether the vlogs can effectively improve the knowledge of the topic.

Compliance with Ethical Standards

The data collection of the study involved the processes of ethical considerations.

Before the data gathering, the researcher asked his adviser and statistician permission and statistics to make the research better.

The study's adopted instrument was approved by the panel members before the deployment procedure to ensure validity and reliability. Consent letters were also given and approved by the school heads of participating schools so that the participants were ensured that they knew who the researcher is, the organization he is involved with, and the reason for collecting data. These were also appended in the survey form before the question proper.

Also, the participants' permission was accentuated, so they should be aware that their study's involvement is voluntary. The study also made the participants aware that the information they provided as confidential, and their names were kept anonymous. Since the google form was used in the process, the researcher intentionally locked the "see-other-results" function to secure that other participants could not access others' personal information. When possible and applicable, the sharing of the results back to the participants would be served after the data had been analyzed.

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EFFECT OF MODULAR LEARNING ON PERFORMANCE IN BIOLOGY, CHEMISTRY AND PHYSICS OF GENERAL SCIENCE STUDENTS OF MINDANAO STATE UNIVERSITY-SULU

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ABSTRACT

This study aimed to find out what are the effects of modular learning to the performance in Biology 021, Chemistry 032 and Physics 101 among 2nd year General Science students. Moreover, it determined what are the performance level of General Science students in Biology 021, Chemistry 032 and Physics 101. Lastly, it explored if there are significant difference of the effect of modular learning and the level of performance in Biology 021, Chemistry 032 and Physics 101 of the 2nd year General Science students. The study used the descriptive quantitative research design where the researcher utilized a checklist questionnaire to acquire the data needed. The data was gathered in Mindanao State University-Sulu campus. The respondents of the study were thirty (30) students which are the 2nd year general science student of the College of Education. Purposive Sampling was used in the selection of the respondents. The statistical tools used in this study were weighted mean and t-test. Finally, base from the research findings, the researchers concluded that modular learning is an effective alternative modality in learning among 2nd year General science students. However, effects of modular learning were not related with the level of performance of the students.

Keywords: *modular learning, academic performance, biology, chemistry, physics*

INTRODUCTION

Learning is the soul of education that eliminates ignorance within individual's mind, it is an ability possessed by human being that plays a crucial role in the existence of human life, from the moment a person was brought into this world, the process of learning begins until he or she reaches the stage of late adulthood which means that learning is a continuous process. According to Ambrose (2020), "learning is a process that leads to change, which occurs as a result of experience and increases the potential of improved performance and future learning".

Meanwhile, learner is a term used for individuals that acquire a certain knowledge and is commonly used in school as it refers to the student. They are the one that seeks knowledge through experiences that they have acquired from the teacher's lessons and school activities given to them during school hours. That is how the student engaged in the process of learning. But in the year of 2019, when everyone was experiencing difficulties in the sudden adjustment to the new normal way of living because of the pandemic (Covid19), the process of learning of student changed and have to make an adjustment in order to still pursue education despite of pandemic and that leads to the use of modular set of learning, where the student must practice a self-study inside their home to prevent the spread of virus.

Jailani, et al (2024), By this time, maybe the pandemic is gone but we cannot deny that its trace still remains thus education must not stop. In order to continue the learning of the youths, the government has come up with a solution to render the needs of the students because we all believe that education is the key to success so it must not be disrupted. The idea of continuing education has been on the line since it is one of the priorities of the government; the learnings of the students. Abdurahman, et al (2024) This scenario also holds true in MBHTE-Sulu in the Bangsamoro Region in Muslim Mindanao, Southern Philippines where teachers in the intermediate grade level have also facing several challenges in the mainstream of classroom instruction. It is very hard for teachers to facilitate learning in the classroom considering the in-depth contents of science, the classroom strategies and materials to be used, more so, the way how students being evaluated in the light of the k-12 curriculum.

In this situation, where every student has to practice their self to learn their lessons all by themselves there might be some factors that may affect their academic performance toward a certain course due to the lack of physical presence of their instructors. However, there are also student who are not totally struggling to practice self-study as they are used to it or they might just have a higher IQ level than the other student. Since there are three categories of IQ level which are the Gifted, Above Average Intelligence and the Average Intelligence. The researchers seek to find the solution for this study for the purpose of determining the effect of modular learning on the level of performance among the students taking up the Bachelor of Secondary Education Major in General Sciences. The researchers believe that this research will contribute to the improvement of academic performance of the students who has a plan of entering and are currently taking the course of BSED General Sciences. Additionally, it is useful on the part of teachers as they can relate to students' current situation and their needs in acquiring the best quality

education.

Research Questions

The purpose of this study is to determine the effect of modular learning on the performance in biology, chemistry and physics among students of the Bachelor of Secondary Education Major in General Science in Mindanao State University-Sulu. Specifically, this study sought to answer the following:

1. What are the effects of modular learning on the performance in Biology 021, Chemistry 032 and Physics 101 among students of the Bachelor of Secondary Education Major in General Science of MSU Sulu?
2. What are the performance levels of General Science students in Biology 021, Chemistry 032 and Physics 101?
3. Is there significant difference of the effect of modular learning and the level of performance in Biology 021, Chemistry 032 and Physics 101?

METHODOLOGY

Research Locale

The setting of the study was conducted at Mindanao State University-Sulu. The Mindanao State University-Sulu is the only university in Jolo, Sulu located at Capitol Site near the Provincial Capitol. The said university is composed of seven (7) colleges excluding the Mindanao State University-Sulu Laboratory High School. Particularly, this study is conducted at College of Education in between the College of Business Administration and College of Public Affairs.

Sampling Method

In this study, the researchers used Purposive Sampling or Judgement sampling to select the participant of the study. According to Crossman (2020), Purposive Sampling is a non-probability sample that is selected based on characteristics of a population and the objective of the study.

Moreover, the respondents of this study are the Second Year General Science Students of the College of Education in Mindanao State University-Sulu which is comprised of thirty (30) students.

Research Instrument

The researchers used questionnaire checklist to obtain the needed information for this study and to help them answer the objectives of the study in finding out the effect of Modular Learning to their academic Performance in Chemistry 032, Physics 101 and Biology 021. Below is the attached scale used for the performance of the students.

Table 3.1
SCALE USED FOR THE PERFORMANCE OF THE STUDENTS

Scales	Grades	Description
4	1.25-1.5	Very Satisfactory
3	1.75-2.0	Satisfactory
2	2.25-2.5	Good
1	2.75-3.0	Fair

Statistical Treatment of Data

For the analysis of data, the researchers used Weighted Mean as a statistical tool in dealing with the effect of Modular learning in the performance of General Science students and for the significant difference of the effect of Modular learning on the level of performance in Biology, Chemistry and Physics used T-test.

Scope and Delimitation

The main purpose of this study is to provide an accurate information regarding the effect of modular learning on the level of performance among General Science Students of the College of Education of Mindanao State University Sulu. The researcher limited the study to 30 second year students taking up Bachelor of Secondary Education major in General Sciences of Mindanao State University Sulu, College Year 2020-2021. Each of the respondent were given a questionnaire to answer that serves as survey.

RESULTS AND DISCUSSION

This section presents the result, discussion and analysis of the data gathered by the researchers. This includes the effect of modular learning to the performance in Biology 021, Chemistry 032 and Physics 101 among the students of the Bachelor of Secondary Education Major in General Science of MSU Sulu, School Year 2020-2021 and Performance Levels of Bachelor of Secondary Education Major in General Science students in Biology 021, Chemistry 032 and Physics 101 in the School Year 2020-2021 and of course the significant difference of the effects of modular learning and the level of performance in Biology 021, Chemistry 032 and Physics 101 among students of the Bachelor of Secondary Education Major in General Science of MSU Sulu, School Year 2020-2021.

Table 4.1A
Effect of Modular Learning in Biology 021

ITEMS	Mean	Description
1. Modular learning improves my reading comprehension in Biology.	2.80	Effective
2. Modular Learning boosted my self-confidence dealing biology by answering my paper works independently.	2.87	Effective
3. Modular learning motivates me to gain a better performance in Biology	2.53	Effective
4. Modular learning enriches my vocabulary in scientific term used in Biology	2.77	Effective
5. Modular learning makes biology more interesting to learn.	2.77	Effective
6. Modular learning lessens the difficulties in understanding the topics in Biology.	2.40	Less Effective
7. Modular learning improved my performance in Biology.	2.50	Effective
OVERALL MEAN	**2.66**	**Effective**

Legend: 1.00-1.49= Not Effective, 1.5-2.49 =Less Effective, 2.5-3.49= Effective, 3.5-4.49= Very Effective

Table 4.1A presents the effect of modular learning in Biology 021 among the students of the Bachelor of Secondary Education Major in General Science of MSU Sulu, School Year 2020-2021. As shown in the table, the mean of the responses to the following statements; *Modular Learning improves my reading comprehension in Biology 021* **(Item No. 1)**, *Modular Learning boosted my self-confidence dealing Biology 021* **(Item No. 2)** *Modular learning motivates me to gain a better performance in Biology 021* **(Item No. 3),** *Modular Learning enriches my vocabulary in scientific term used in Biology 021* **(Item No. 4)** *Modular learning makes Biology 021 more interesting to learn* **(Item No. 5)** and *Modular learning improved my performance in Biology 021* **(Item No. 7)** with the mean of 2.80, 2.87, 2.53, 2.77, 2.77, 2.53 respectively, given descriptive equivalent of **"Effective".**

Nevertheless, the mean of the responses to the statement; *Modular Learning lessens the difficulties in understanding the topics in Biology 021* **(Item No. 6)** with a descriptive equivalent of **"Less Effective".**

The data shows that the overall mean is **2.66** with a descriptive equivalent of **"Effective".** This means that, the data implies that Modular Learning has a positive effect on the performance in Biology 021, among the students of the Bachelor of Secondary Education Major in General Science of MSU Sulu, School Year 2020-2021.

Table 4.1B
Effect of Modular Learning in Chemistry 032

ITEMS	Mean	Description
1. Modular learning improves my reading comprehension in Chemistry.	2.70	Effective
2. Modular Learning boosted my self-confidence dealing chemistry by answering my paper works independently	2.60	Effective
3. Modular learning motivates me to gain a better performance in Chemistry.	2.60	Effective
4. Modular learning enriches my vocabulary in scientific term used in Chemistry	2.70	Effective
5. Modular learning makes chemistry more interesting to learn.	2.67	Effective
6. Modular learning lessens the difficulties in understanding the topics in Chemistry.	2.33	Less Effective
7. Modular learning improved my performance in Chemistry	2.50	Effective
OVERALL MEAN	**2.59**	**Effective**

Legend: 1.00-1.49= Not Effective, 1.5-2.49 =Less Effective, 2.5-3.49= Effective, 3.5-4.49= Very Effective

Table 4.1B presents the effect of modular learning in Chemistry 032 among the students of the Bachelor of Secondary Education Major in General Science of MSU Sulu, School Year 2020-2021.

As shown in the table, the mean of the responses to the following statements; *Modular Learning improves my reading comprehension in Chemistry 032* **(Item No. 1)** *Modular Learning boosted my self-confidence dealing Chemistry 032 by answering my paper works independently* **(Item No.2)** *Modular learning motivates me to gain a better performance in Chemistry 032* **(Item No. 3)** *Modular Learning enriches my vocabulary in scientific term used in Chemistry 032* **(Item No. 4)** *Modular learning makes and*

Chemistry 032 more interesting to learn **(Item No.5)** and *Modular learning improved my performance in Chemistry 032* **(Item No. 7)** with the mean of 2.70, 2.60, 2.60, 2.70, 2.67, 2.50 respectively given the descriptive equivalent of **"Effective".**

Nevertheless, the mean of the responses to the statement that *Modular Learning lessens the difficulties in understanding the topics in Chemistry 032* **(Item No. 6)** with the mean of 2.33 given the descriptive equivalent of **"Less Effective".**

The data shows that the overall mean is **2.59** given the descriptive equivalent of **"Effective".** This means that, the data implies that Modular Learning has a positive effect on the performance in Chemistry 032 among the students of the Bachelor of Secondary Education Major in General Science of MSU Sulu, School Year 2020-2021.

Table 4.1C
Effect of Modular Learning in Physics 101

ITEMS	Mean	Description
1. Modular learning improves my reading comprehension in Physics	2.60	Effective
2. Modular Learning boosted my self-confidence dealing physics by answering my paper works independently	2.43	Less Effective
3. Modular learning motivates me to gain a better performance in Physics.	2.53	Effective
4. Modular learning enriches my vocabulary in scientific term used in Physics	2.53	Effective
5. Modular learning makes physics more interesting to learn.	2.46	Less Effective
6. Modular learning lessens the difficulties in understanding the topics in Physics.	2.40	Less Effective
7. Modular learning improved my performance in Physics.	2.43	Less Effective
OVERALL MEAN	**2.49**	**Less Effective**

Legend: 1.00-1.49= Not Effective, 1.5-2.49 =Less Effective, 2.5-3.49= Effective, 3.5-4.49= Very Effective

Table 4.1C presents the effect of modular learning to the performance in Physics 101 among the students of the Bachelor of Secondary Education Major in General

Science of MSU Sulu, School Year 2020-2021. As shown in the table, the mean of the responses to the following statements; *Modular Learning improves my reading comprehension in Physics 101* **(Item No. 1)** *Modular learning motivates me to gain a better performance in Physics 101* **(Item No. 3)** *Modular Learning enriches my vocabulary in scientific term used in Physics 101* **(Item No.4)** 2.60, 2.53, 2.53 respectively given the descriptive equivalent of **"Effective".**

Nevertheless, the mean of the responses to following statements; *Modular Learning boosted my self-confidence dealing Physics 101 by answering my paper works independently* **(Item No. 2)** *Modular learning makes Physics 101 more interesting to learn* **(Item No. 5)** *Modular Learning lessens the difficulties in understanding the topics in Physics 101***(Item No. 6)** and lastly *Modular learning improved my performance in Physics 101 (***Item No. 7)** 2.43, 2.46, 2.40, 2.43 respectively given the descriptive equivalent of **" Less Effective".**

The data shows that the overall mean is **2.49** with a descriptive equivalent of **"Less Effective".** This means that, the data implies that Modular Learning has a less effect on the performance in Physics 101 among students of the Bachelor of Secondary Education Major in General Science of MSU Sulu, School Year 2020-2021.

Table 4.1D
Effect of Modular Learning in Biology 021, Chemistry 032 and Physics 101

Performance in	Mean	Description
BIOLOGY 021	2.66	Effective
CHEMISTRY 032	2.59	Effective
PHYSICS 101	2.49	Less Effective
OVERALL MEAN	**2.58**	Effective

Legend: 1.00-1.49= Not Effective, 1.5-2.49 =Less Effective, 2.5-3.49= Effective, 3.5-4.49= Very Effective

Table 4.1D presents the effect of modular learning among the students of the Bachelor of Secondary Education Major in General Science of MSU Sulu, School Year 2020-2021. The effect of modular learning in biology 021 with the mean of **2.66** given descriptive equivalent of **"Effective".** In Chemistry 032 with the mean of **2.59** given descriptive equivalent of **"Effective".** In Physics 101, mean is **2.49** with a descriptive

equivalent of **"Less Effective".**

However as shown in the table, the overall mean in the three mentioned subjects is **2.58** with a descriptive equivalent of **"Effective".** This means that, the data implies that Modular Learning effective among the students of the Bachelor of Secondary Education Major in General Science of MSU Sulu, School Year 2020-2021.

Lim (2016), this study entitled "Effectiveness of Modular Instruction in Word Problem Solving of BEED Students", used Quasi-experimental design to the third year BEED students. Based on the findings cited, it concluded that modular instruction in teaching Math specifically word problem solving, it is effective teaching approach.

According to Dr. Padmapriya P.V. (2015), modules helped to develop self-learning capacity among the learners. The present study implied that this is self-learning style in which immediate reflection of the self is possible, which motivated the students to regulate and manage their own learning styles, and thereby to create an interest and attitude towards science among the students as they are free to learn at their own pace. With the help of modules students learned and interacted which boost their confidence in their own learning. The student's treated with modular approach achieved higher mean scores than students teach through activity-oriented method. The study revealed that effectiveness of self-instructional module on achievement among secondary school students and the administrators must take necessary steps to give special training to teacher in developing modular packages.

Table 4.2
Performance levels in Biology 021, Chemistry 032 and Physics 101

Items	Total Average	Description
Biology 021	2.93	Satisfactory
Chemistry 032	3.40	Satisfactory
Physics 101.	3.10	Satisfactory
OVERALL MEAN	**3.14**	**SATISFACTORY**

Legend: 1.00-1.49= Fair 1.5-2.49 =Good 2.5-3.49= Satisfactory 3.5-4.00= Very Satisfactory

Table 4.2 Presents the Performance Levels of Bachelor of Secondary Education Major in General Science Students in Biology 021, Chemistry 032 and Physics 101 in the School Year 2020-2021. As shown in the table the data shows that Biology 021 gathered the mean of **2.93** with a descriptive equivalent of **"Satisfactory"** as well as in Chemistry 032 gathered the mean of **3.40** with a descriptive equivalent of **"Satisfactory"** and also, in Physics 101 gathered the mean of **3.10** with a descriptive equivalent of **"Satisfactory"** and so their overall mean is **3.14** with a description of **"Satisfactory".**

According to Victorio B. Duyan (n.d.) in his study entitled " Effectiveness of Modular Approach in Teaching and Learning on Chemistry of GASES and their Application at University of Perpetual Help System Laguna (UPHSL)", modular approach should be applied to other subjects as well as other level of education and teachers would use modular teaching to improve the academic achievements of the students. And so, in 2020-2021 the students of BSED got the satisfactory level of performance because it only proves the effectiveness of modular learning.

Table 4.3
Significant difference of the effect of modular learning and the level of performance in Biology 021, Chemistry 032 and Physics 101

ITEMS	T	Sig. (2-tailed)	Decision
EFFECT MODULAR LEARNING AND THE LEVEL OF PERFORMANCE	10.035	.000	Ho Rejected

Table 4.3: Presents the significant difference of the effect of modular learning and the level of performance in Biology 021, Chemistry 032 and Physics 101 among the students of the Bachelor of Secondary Education Major in General Science of MSU Sulu, School Year 2020-2021. The data revealed that the sig. value is .000 which is lesser than 0.05 the significance level. Therefore, the null hypothesis is rejected meaning "There is significant difference of the effect of Modular learning and the level of performance".

According to Anthony Abaidoo (2018) as cited in Narah and Abdullah (2016), academic performance is the knowledge gained which is assessed by marks by a teacher and/or educational goals set by students and teachers to be achieved over a specific period of time and they added that these goals are measured by using continuous assessment or examinations results.

According to Shuja, Qureshi, Schaeffer, & Zareen (2019) in their study entitled

"Effect of m-learning on student's academic performance mediated by facilitation discourse and flexibility", as they suggested that a multifaceted phenomenon, influenced by diverse factors such as meta-reflective learning and cognition, interest, motivation for learning, skills, engagement, quality of teaching and socio-economic status, characterized by enhance student's capability to perform at the desired level. Don Elger (n.d.) claimed performance, as the adage goes, is a "journey not a destination." The location in the journey is labeled as the level of performance. Each level characterizes the effectiveness or quality of a performance.

Conclusions

On the basis of the foregoing findings, the following conclusion were drawn; Findings are limited by the used of checklist questionnaire in the criteria of the effect of modular learning in Biology 021, Chemistry 032 and Physics 101 assessed as "**effective"** The level of performance in Biology 021, Chemistry 032 and Physics 101 among the students of Bachelor of secondary major in general science assessed as **"Satisfactory".** The effect of modular learning and the level of performance among the students of the Bachelor of Secondary Education Major in General Science were not related, in fact there is significant difference of the effect of modular learning and the level of performance of the General Science students. Base from the research findings the researchers concludes that modular learning is an effective alternative to use in dealing with the continuous learning of the students even at their own home. However, Effects of modular learning were not related with the level of performance of the students. The students might find the modular learning as a very challenging task as they are learning on their own. But their determination to learn more and to maintain their level of performance as satisfactory made them to strive hard to put an additional effort in learning their lesson continuously and independently which made the majority of them to gain a satisfactory level of performance is what matters most.

Recommendations

On the basis of the findings, the researchers hereby formulate the following recommendations;

1. The administrators should continue in supporting and motivating the teacher's way of imparting their knowledge through giving them the essential materials in making modules like bond papers, printers and inks to ensure good quality education.
2. The teacher must continue in performing their task as an educator effectively even they do not often meet their students like how they use to be because of the threat of Covid-19 virus. In order to still promote a good quality education. For instance, in chemistry and physics the teacher might do something that adds up with their explanation in modules through making video explanation regarding their topic specially in solving situational problems and if possible they could explain the topic in the vernacular language, in order for the students to learn the lesson more effectively and whole heartedly.

3. Future researchers should investigate the same studies in order to prove more the accuracy of the findings of this study.

Compliance with Ethical Standards

The researchers hereby declare that an informed consent was obtained from the respondents of the study. In addition, the researchers assure that the information gathered from respondents are kept confidential. Plagiarism was strictly observed throughout the research process, and that there was no bias in the interpretation of the findings and that the results were used purely for research purposes.

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EMPOWERMENT AND ORGANIZATIONAL BEHAVIORS: A STUDY OF PRIVATE SCHOOL TEACHERS IN CABUYAO, LAGUNA

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ABSTRACT

This research investigated the relationship between teacher empowerment and organizational behavior in 30 private school teachers from thirteen schools in Brgy. Mamatid, Cabuyao, Laguna. A review of relevant literature provided the theoretical foundation for the study. Employing a descriptive design, questionnaires were used to collect data. The findings revealed that the teachers felt empowered, with positive views on their ability to manage personal and professional development. Additionally, they demonstrated high levels of organizational commitment, particularly moral commitment. They consistently exhibited all dimensions of organizational citizenship behavior, with kindness being the least frequent. Overall, the teachers displayed high levels of positive organizational behaviors within their schools. The statistical analysis using regression confirmed a significant influence of teacher empowerment on their organizational behavior. These findings hold implications for the management of teacher education institutions. The results of the regression analysis indicate significant relationships between predictor variables (teacher empowerment, organizational commitment, and professional commitment) and the criterion variable of teachers' organizational behaviors. Specifically, teacher empowerment demonstrates a Beta coefficient of 0.264, organizational commitment shows a coefficient of 0.078, and professional commitment exhibits the highest coefficient at 0.65. These coefficients are associated with p-values below the 0.05 alpha threshold, indicating statistical significance. Furthermore, the collective predictive power of these variables is underscored by an F value of 39.087 with a corresponding significant value of 0.000, well below the 0.05 alpha threshold. This finding suggests that the combined influence of the predictor variables explains a statistically significant proportion of the variance in teachers' organizational behaviors. In light of these results, it is evident that teacher empowerment significantly influences teachers' organizational behaviors. Therefore, the null hypothesis, which posits no significant influence of empowerment on organizational behaviors, is rejected based on the analysis outcomes and associated probabilities.

Keywords: *Teacher Empowerment*, *Organizational Behavior*, *Private School Teachers*, *Organizational Commitment*

INTRODUCTION

Every organization needs Human Resource Management because employees are valuable assets. They bring with them their knowledge and experience, gained through their work and learning (Imam & Shafique, 2018). Human capital is the heart of any successful project. Companies increasingly value employees who go the extra mile, beyond just their job duties. By equipping them with the right resources, organizations empower their workforce to reach their peak potential. This focus on employee effectiveness and efficiency benefits everyone involved. People are the engines of innovation and creativity, driving success for both employers and them.

Teachers are key to a school's achievements, especially when it comes to providing a good education for their students, who are the school's main focus. In fact, teachers are often seen as nation builders because a country's success in any field relies on the knowledge and skills that teachers give to their students (Duncan & Sunkey, 2019). Schools can't function without teachers. Their knowledge, creativity, and ongoing learning are crucial to the system's success (Cheasakul & Varma, 2018). Because of this, empowering teachers is a smart move for any school. "Teacher empowerment" is a common term in education discussions, and research shows it can significantly boost teachers' "organizational citizenship behavior" (OCB) (Mesbahi, 2017). This basically means teachers going above and beyond their job descriptions to help the school improve. Since OCB helps schools thrive, it makes sense for any institution to empower its teachers and encourage them to freely contribute their time and energy.

Effective teachers go beyond simply completing tasks. They actively create a positive learning environment - meaningful, student-centered, creative, adaptable, and encouraging open communication. This extends to their role as role models, striving to make the school itself more effective and efficient. Their dedication goes above and beyond expectations, driven by a spirit of service to the organization. To further empower teachers, school leaders should foster a culture of decision-making, providing necessary resources and information for teachers to take ownership of their choices and implement them. However, some teachers may resist such changes.

Since empowered teachers tend to demonstrate positive behaviors within the school (Tindowen, 2019), this research investigates how teacher empowerment impacts the way teachers working in Brgy. Mamatid,Cabuyao Laguna, behave within their school organization.

Research Questions

The general problem of the study was: How may empowering teachers influence organizational behaviors?

Specifically, it sought answers to the following questions:

1. How may the empowerment of the respondents be described in terms of:
    1.1 Trust;
    1.2 Professional Development;
    1.3 Status; and
    1.4 Cooperation?
2. How may the organizational behaviors of the respondents be described in terms of:
    2.1 Organizational commitment;
    2.2 Professional commitment; and
    2.3. Organizational citizenship behaviors
3. Does empowerment significantly influence teachers' organizational behaviors?
4. What management implications maybe drawn from the findings of the study?

METHODOLOGY

Research Design

The quantitative research approach was employed in this study to analyze the influence of empowerment on teachers' organizational behaviors in thierteen private schools in Brgy, Mamatid Cabuyao Laguna . Bhandari (2020) defines quantitative research as collecting and analyzing numerical data in order to identify patterns and averages, create predictions, examine causal connections, and generalize conclusions to broader populations.

The researcher conducted a survey for this study using an adapted questionnaire was used as a measurement instrument. The respondents were required to respond to all items on the questionnaire, providing their perspectives on the influence of empowerment on the organizational behaviors of teachers.

A set of standardized questionnaires on the profile characteristics, empowerment, organizational commitment, professional commitment, and teachers' organizational behaviors was used as primary data-gathering tools.

Research Locale

The study will be conducted Brgy, Mamatid Cabuya Laguna consist of thirteen bdifferent private schools.

Population and Sample

The research population for this study consisted of 30 private school teachers from Brgy, Mamatid, Cabuyao Laguna for the S.Y. 2022-2023, who answered the survey questionnaire selected through convenience sampling and fishbowl sampling. The respondents were selected to come up with sufficient data to serve as background information that might be the answer to the problem. Respondents were given survey

questionnaires from which they selected the best response evaluating the influence of empowerment on teachers' organizational behaviors.

Research Instrument

This research relied heavily on the questionnaire as the significant instrument and primary source of gathering data. The study used a set of questionnaires that were answered by the respondents that revealed the influence of empowerment on teachers' organizational behaviors. The researcher asked permission from the authors to use the questionnaire with some revisions to fit the nature of the respondents.

In this study, four data collection instruments were utilized to gather relevant information. Section A employed the "Teacher Empowerment Scale," designed by Özkan Hıdıroğlu and Tanrıöğen (2022), to assess teacher empowerment. Section B incorporated the "Organizational Commitment Scale," Teachers' Professional Commitment Scale,"is adapted on the study of Ergen and Kanadili (2017), to gauge organizational commitment across 15 items structured into three dimensions.

Lastly, section D employed the "Organizational Citizenship Behaviors Scale," adapted to the of Polat (2019) from the original work by Podsakoff et al. (1990), to measure organizational citizenship behavior.

Under each statement is a 5-point scale providing alternatives to identify the degree of agreement or disagreement each respondent will have on every statement. The respondents were asked to pick one of the choices strongly agree, agree, neutral, disagree, and strongly disagree.

Validation of Questionnaire

To make sure that the questionnaire is valid and reliable, the draft of the questionnaire was submitted to the thesis adviser to address some comments and recommendation before it was pretested for certain validation among the respondents. The research acquired Cronbach-Alpha result of (0.9457) of the questionnaires administered for validation. It denotes that the questionnaire is valid and reliable.

Data Gathering Procedure

The mode of data gathering was the questionnaire method. Each respondent was given a well-structured, well-instructed, and standardized set of questions to describe their profile characteristics quantitatively, empowerment, organizational commitment, professional commitment, and organizational behaviors.

The researcher collected the questionnaires from the respondents. The researcher checked if all the items are answered religiously for the conduct of the study.

Statistical Treatment of the Data

The data collected underwent tabulation and processing using the Statistical Packages for Social Sciences (SPSS). The findings were then presented utilizing appropriate tables and figures. Respondents' profile characteristics were obtained through a simple method where respondents indicated their personal information by marking, shading, or checking corresponding circles on a questionnaire.

Meanwhile, to analyze and assess the impact of empowerment on teachers' organizational behaviors, regression analysis was employed by the researcher. The study utilized weighted mean calculation, aggregating scores from the questionnaire checklist. The outcomes were subsequently shared with experts from Meycauayan College, as well as with the advisor and critics for evaluation and feedback.

Scale	Range	Descriptive Evaluation	Agreement Degree
5	4.21-5.0	Strongly Agree	Very High
4	3.41-4.20	Agree	High
3	2.61-3.40	Neutral	Neutral
2	1.81-2.60	Disagree	Low
1	1.00-1.80	Strongly Disagree	Very Low

This illustrates the utilization of a descriptive scale to assess mean scores related to empowerment, organizational commitment, and teachers' organizational behaviors, as well as the impact of empowerment on teachers' organizational behaviors. The scale categorizes mean scores into distinct interpretations: a score ranging from 1.00 to 1.80 signifies strong disagreement, a score between 1.81 and 2.60 denotes disagreement, a score from 2.61 to 3.40 indicates neutrality, a score between 3.41 and 4.20 represents agreement, and a score falling within the range of 4.21 to 5.0 is interpreted as strong agreement.

RESULTS

When discussing empowerment and its conceptualization, it's important to recognize the scholarly literature on the subject. According to Kabeer (2019), empowerment involves "the expansion in people's ability to make strategic life choices in a context where this ability was previously denied to them" (p. 437). This definition underscores the significance of agency and the removal of structural barriers that limit individuals' capacity to control their lives and participate fully in society. In essence, empowerment encompasses both individual capabilities and broader societal transformations aimed at redistributing power and fostering inclusive development (Kabeer, 2019).

Table 2. *Empowerment in Terms of Trust*

Indicators	Mean	Interpretation
1. I feel that my administrators value me as a teacher.	4.73	Strongly Agree
2. My administrators treat me empathically.	4.62	Strongly Agree
3. Our administrators do not let our time go to waste with unnecessary works.	4.63	Strongly Agree
4. My administrators give me the opportunity to say my thoughts.	4.65	Strongly Agree
5. I think I have a profession with high social status.	4.60	Strongly Agree
6. The teaching profession provides me with the social status I desire in my environment.	4.65	Strongly Agree
7. Teaching makes it possible for me to deal with many cultural issues.	4.63	Strongly Agree
8. The attitudes of people around me towards teachers make me strong.	4.69	Strongly Agree
9. The teaching profession gives me confidence.	4.79	Strongly Agree
10. The teaching profession gives me dignity.	4.81	Strongly Agree
11. Other teachers at our school appreciate my work.	4.65	Strongly Agree
12. I have a chance to cooperate with other teachers at my school.	4.78	Strongly Agree
Average	**4.69**	**Strongly Agree**

Table 2 presents teacher empowerment in terms of trust. As shown in the table, the overall mean was 4.69 with a verbal interpretation of strongly agree or very high. This implies that the respondents strongly agreed with the views cited along with teacher empowerment in terms of trust.

All of the respondents rated strongly agreed with all the indicators on the following statements: I feel that my administrators value me as a teacher with 4.73; My administrators treat me empathically with 4.62; Our administrators do not let our time go to waste with unnecessary work with 4.63; My administrators give me the opportunity to say my thoughts with 4.65; I think I have a profession with high social status with 4.60; The teaching profession provides me with the social status I desire in my environment with 4.65; Teaching makes it possible for me to deal with many cultural issues with 4.63; The attitudes of people around me towards teachers make me strong with 4.69; The teaching profession gives me confidence with 4.79; The teaching profession gives me dignity with 4.81; Other teachers at our school appreciate my work with 4.65; and lastly, I have a chance to cooperate with other teachers at my school with 4.78.

Table 3. *Empowerment in Terms of Professional Development*

Indicators	Mean	Interpretation
1. Participation in seminars/conferences of important people in my profession is not prevented by the school administration.	4.70	Strongly Agree
2. It is not prevented by the school administration to participate in any kind of training related to my branch.	4.72	Strongly Agree
3. Attending personel development courses (drama, diction, personel development, effective communication, etc.) is supported by the school management.	4.69	Strongly Agree
4. I have the chance to receive trainings about immigrant or problem students by the school administration.	3.96	Agree
5. It is supported by the school administration to receive training on educational technology.	4.31	Agree
6. I have the chance to receive trainings on new teaching methods and techniques by the school administration.	4.76	Strongly Agree
7. I have the chance to participate in in-service trainings frequently and regularly by the school administration.	4.76	Strongly Agree
8. It is supported by the school administration to participate in scientific training in my environment.	4.21	Agree
9. It is supported by the school administration to receive trainings on classroom management.	4.79	Strongly Agree
10. I have chance to participate in training (legislative training) where my Powers and rights are taught.	4.14	Agree
11. The school administration provides me with an environment to attend the courses and trainings I need.	4.27	Agree
Average	4.46	Agree

Table 3 presents the empowerment of teachers in terms of professional development. As shown in the table, the overall mean was 4.46 with a verbal interpretation of agree. This implies that the respondents had a high level of empowerment in terms of professional development.

Most of the respondents rated strongly agreed with most of the indicators with the following statements: Participation in seminars/conferences of important people in my profession is not prevented by the school administration with 4.70; It is not prevented by the school administration to participate in any kind of training related to my branch with 4.72; Attending personel development courses (drama, diction, personel development, effective communication, etc.) is supported by the school management with 4.69; I have

the chance to receive trainings on new teaching methods and techniques by the school administration with 4.76; I have the chance to participate in in-service trainings frequently and regularly by the school administration with 4.76; and lastly, It is supported by the school administration to receive trainings on classroom management with 4.79.

On the other hand, 4. I have the chance to receive trainings about immigrant or problem students by the school administration with 3.96; It is supported by the school administration to receive training on educational technology with 4.31; 8. It is supported by the school administration to participate in scientific training in my environment with 4.21; I have chance to participate in training (legislative training) where my Powers and rights are taught with 4.14; and The school administration provides me with an environment to attend the courses and trainings I need with 4.27 which all indicated agree as a verbal description.

Table 4. *Empowerment in Terms of Status*

Indicators	**Mean**	**Interpretation**
1. My administrators have an understanding towards me.	4.71	Strongly Agree
2. My administrators are supportive of my profession.	4.70	Strongly Agree
3. My administrators behave fairly within the school.	4.72	Strongly Agree
4. I have a healthy dialogue with my administrators.	4.71	Strongly Agree
5. My administrators contact me individually when there is a problem.	4.71	Strongly Agree
6. My administrators respect me.	4.75	Strongly Agree
7. My administrators apply school rules in the same way to everyone.	4.72	Strongly Agree
8. I feel free while carrying out my duties.	4.73	Strongly Agree
Average	**4.72**	**Strongly Agree**

Table 4 shows that teachers perceive their level of empowerment in terms of their status as very high or strongly agree with 4.72. All of the respondents rated strongly agreed with all the indicators on the following statements: My administrators have an understanding towards me; My administrators are supportive of my profession; My administrators behave fairly within the school; I have a healthy dialogue with my administrators; My administrators contact me individually when there is a problem; My administrators respect me; My administrators apply school rules in the same way to everyone; and I feel free while carrying out my duties with 4.71, 4.70, 4.72, 4.71, 4.71, 4.75, 4.72, and 4.73 of mean scores, respectively.

Table 5. *Empowerment in Terms of Cooperation*

Indicators	Mean	Interpretation
1. People around me respect the teaching profession.	4.76	Strongly Agree
2. Teachers are well accepted by people in this area.	4.76	Strongly Agree
3. The teachers in our school cooperate with each other in line with their Professional goals.	4.77	Strongly Agree
4. Our school has a teaching staff to work with pleasure.	4.73	Strongly Agree
5. The cooperation of the teachers in our school makes me feel safe.	4.74	Strongly Agree
6. I think that the teacher I work with has Professional ethics.	4.74	Strongly Agree
Average	**4.75**	**Strongly Agree**

The data presented in Table 5 reveals the level of empowerment of the teachers in terms of cooperation. As shown in the table, the overall mean was 4.75, indicating strongly agree or very high. All of the respondents rated strongly agreed with all the indicators on the following statements: People around me respect the teaching profession with 4.76; Teachers are well accepted by people in this area with 4.76; The teachers in our school cooperate with each other in line with their Professional goals with 4.77; Our school has a teaching staff to work with pleasure with 4.73; The cooperation of the teachers in our school makes me feel safe with 4.74; and I think that the teacher I work with has Professional ethics with 4.74.

Based on the results, it can be said that teachers gain confidence and strength as a result of helping their coworkers with their job-related issues and being really polite to them. In addition, it can be said that strong teachers help the organization's social standing, go above and beyond the call of duty, work and cooperate professionally, adjust to new developments more quickly, and collaborate and assist the organization.

Table 6. *Organizational Commitment in Terms of Moral*

Indicators	Mean	Interpretation
1. I feel devoted to my school.	4.69	Strongly Agree
2. I feel that I have to support my school.	4.73	Strongly Agree
3. I see myself as an employee of the school even when I'm out of school.	4.44	Agree
4. I feel that it is my responsibility to help my school succeed.	4.66	Strongly Agree
5. I get upset when people say bad things about my school.	4.51	Strongly Agree
Average	**4.61**	**Strongly Agree**

In terms of moral in organizational commitment, it may be perused in Table 6 that teachers have a very high organizational commitment in terms of moral, indicating strongly agree with a mean of 4.61.

Most of the respondents rated strongly agreed with all the indicators on the following statements; I feel devoted to my school; I feel that I have to support my school; I feel that it is my responsibility to help my school succeed; and I get upset when people say bad things about my school with 4.69, 4.73, 4.66, and 4.51 of mean scores, respectively. On the other hand, I see myself as an employee of the school even when I'm out of school and got a mean score of 4.44, indicating a verbal description of agree.

The results of this study showed that teachers had the most moral commitment. For the school organization, this is a beneficial condition. Because high moral commitment demonstrates that employees internalize their feeling of duty from school and hence embrace their institutions, as well as generate a sense of belongingness to their institutions.

Table 7. *Organizational Commitment in Terms of Alienative*

Indicators	**Mean**	**Interpretation**
1. I sometimes want to leave my school and never want to come back again.	2.25	Disagree
2. I often feel and find myself taking revenge on my school.	1.56	Disagree
3. I feel angry when I think of my school.	1.88	Disagree
4. I feel trapped.	2.15	Disagree
14. No matter what I do at my school, the school remains unchanged.	2.82	Neutral
Average	**2.13**	**Disagree**

Meanwhile, in Table 7, teachers overall disagree with the statements about organizational commitment in terms of alienative, indicating a mean of 2.13.

Most of the respondents rated disagreed with all the indicators on the following statements: I sometimes want to leave my school and never want to come back again with 2.25; I often feel and find myself taking revenge on my school with 1.56; I feel angry when I think of my school with 1.88; and I feel trapped with 2.15. On the contrary, No matter what I do at my school, the school remains unchanged and got a verbal description of neutral with 2.82 mean score.

Table 8. *Organizational Commitment in Terms of Calculative*

Indicators	Mean	Interpretation
1. I try my best if my contributions to the school are seen and appreciated.	2.93	Neutral
4. I feel more comfortable with my work that I integrate too much when I see the rewards of my work.	4.16	Agree
7. The thought of getting more individual rewards from my school even motivates me.	3.54	Agree
10 I make an effort to the extent that I get rewarded in my school.	3.33	Neutral
13. I support my school as much as it supports me.	4.61	Strongly Agree
Average	**3.72**	**Agree**

Table 8 presents the organizational commitment in terms of calculative. As shown in the table, the overall mean was 3.72, indicating agree or high.

The results reveal that teachers have a moderate level of calculative commitment. The reasons for their calculative commitment to their school may be that they feel more comfortable with their work, and the support they are getting from the institutions.

Table 9. *Professional Commitment in Terms of Professional Pleasure*

Indicators	Mean	Interpretation
1. I enjoy doing my job.	3.85	Agree
2. If I had the opportunity, I would change my job.	2.98	Agree
3. I enjoy raising children.	3.78	Agree
4. I enjoy talking about my job.	3.67	Agree
5. I like taking care of children.	3.79	Agree
6. I love my job.	4.31	Agree
Average	**3.73**	**Agree**

The teachers agreed with their professional commitment in terms of professional pleasure as shown by the mean scores of 3.73. All of the respondents rated agreed with all the indicators on the following statements in professional pleasure: I enjoy doing my job; If I had the opportunity, I would change my job; I enjoy raising children; I enjoy talking about my job; I like taking care of children; and I love my job with 3.85, 2.98, 3.78, 3.67, 3.79, and 4.31of mean scores, respectively.

Table 10. *Professional Commitment in Terms of Social Gain*

Indicators	Mean	Interpretation
7. I feel safe in my job.	4.18	Agree
8. I feel my professional personal rights to be sufficient.	3.71	Agree
9. I think that my job gives me respect in society.	4.76	Strongly Agree
10. I have a job with comfortable working conditions.	3.69	Agree
11. I have enough rest in my job.	2.26	Disagree
Average	**3.72**	**Agree**

The teachers agreed with their professional commitment in terms of social gain, and professional career as shown by the mean score of 3.72. All of the respondents rated agreed with all the indicators of social gain: I feel safe in my job; I feel my professional personal rights to be sufficient; I think that my job gives me respect in society; I have a job with comfortable working conditions; and I have enough rest in my job with 4.18, 3.71, 4.76, 3.69, and 2.26 of mean scores, respectively.

The data show that teachers perceived their social gain levels to be high, signifying that their social status and working conditions were excellent. In addition, it was determined that instructors had a high perception of their professional commitment. Based on the scale's items, it can be concluded that teachers adore and accept their profession, follow professional developments, contribute to the development of their profession, and are proud to be in the profession. On the basis of the scale's items, it can be concluded that teachers like and embrace their profession, follow professional developments, and contribute to the development of their profession.

Table 11. *Professional Commitment in Terms of Professional Career*

Indicators	Mean	Interpretation
1. I spent most of my time working at my job.	4.47	Agree
2. I believe that I should focus on my job.	4.43	Agree
3. I have career plans related to my job.	3.70	Agree
Average	**4.20**	**Agree**

The teachers all agreed with their professional commitment in terms of professional career as shown by the mean scores of 4.20. All of the respondents rated agreed on all the indicators in professional career: I spent most of my time working at my job with 4.47; I believe that I should focus on my job with 4.43, and I have career plans related to my job with 3.70.

Table 12. *Organizational Behaviors in Terms of Cooperation*

Indicators	Mean	Interpretation
1. I do not tend to make “Mountains out of molehills.	3.81	Agree
2. I do not consume a lot of time complaining about trivial matters.	3.50	Agree
3. I never find fault with what the organization is doing.	4.24	Agree
4. I always focus on the positive side rather than the negative side.	4.68	Agree
5. I am not the classic “squeaky wheel” that always needs greasing.	3.98	Agree
6. I am always ready to lend a helping hand to those around me.	4.28	Agree
7. I help orient new people even though it is not required.	3.59	Agree
8. I help others who have heavy workloads.	3.64	Agree
Average	**3.96**	**Agree**

The teachers agreed with their organizational behaviors in terms of cooperation as shown by the mean scores of 3.96. All of the respondents rated agreed on all the indicators in cooperation: I do not tend to make “Mountains out of molehills with 3.81; I do not consume a lot of time complaining about trivial matters with 3.50; I never find fault with what the organization is doing with 4.24; I always focus on the positive side rather than the negative side with 4.68; I am not the classic “squeaky wheel” that always needs greasing with 3.98; I am always ready to lend a helping hand to those around me with 4.28; I help orient new people even though it is not required with 3.59; and I help others who have heavy workloads with 3.64.

Teachers demonstrate a strong inclination towards cooperation, emphasizing the positive aspects over the negative ones, reflecting an optimistic outlook. This positive perception of cooperation suggests that teachers are motivated and driven to fulfill their responsibilities with diligence and excellence. Their optimistic attitude towards collaboration indicates a proactive approach in fostering supportive and constructive relationships within their professional environment. By prioritizing positivity in cooperation, teachers contribute positively to the overall atmosphere and effectiveness of educational settings. This inclination towards emphasizing positivity underscores their commitment to maintaining a conducive and encouraging atmosphere for teaching and learning.

Table 13. *Organizational Behaviors in Terms of Kindness*

Indicators	Mean	Interpretation
9. I help others who have been absent.	4.08	Agree
10. I am willing to help others who have work-related Problems	4.19	Agree

11. I am one of the most conscientious employees.	3.53	Agree
12. I believe in giving an honest day's work for an honest day's pay.	4.19	Agree
Average	**4.00**	**Agree**

The teachers agreed with their organizational behaviors in terms of kindness as shown by the mean scores of 4.00. All of the respondents rated agreed on all the indicators in kindness: I help others who have been absent with 4.08; I am willing to help others who have work-related problems with 4.19; I am one of the most conscientious employees with 3.53; and I believe in giving an honest day's work for an honest day's pay with 4.19.

Teachers have high perceptions of kindness which includes helping other employees with school-related tasks and problems. In other words, teachers view themselves as helpful, accountable, and productive in school-related work. In addition, teachers believe that students demonstrate exemplary organizational citizenship. In other words, teachers believe that their duties and behaviors align with the school's objectives and requirements.

Table 14. *Organizational Behaviors in Terms of Conscientiousness*

Indicators	Mean	Interpretation
13. I obey company rules and regulations even when no one is watching.	4.26	Agree
14. I do not take extra breaks.	3.43	Neutral
15. My attendance at work is above the norm.	3.61	Agree
16. I do not abuse the rights of others.	4.74	Strongly Agree
Average	**4.01**	**Agree**

The teachers agreed with their organizational behaviors in terms of conscientiousness as shown by the mean scores of 4.00. All of the respondents rated agreed on all the indicators in conscientiousness: I obey company rules and regulations even when no one is watching with 4.26; I do not take extra breaks with 3.43; My attendance at work is above the norm with 3.61; and I do not abuse the rights of others with 4.74. Teachers have a very high perception of conscientiousness, which indicates that they are willing to go above and beyond what is expected of them.

Table 15. *Organizational Behaviors in Terms of Civil Virtue*

Indicators	Mean	Interpretation
17. I consider the impact of my actions on coworkers.	4.67	Strongly Agree
18. I try to avoid creating problems for co-workers.	4.74	Strongly Agree
19. I take steps to try to prevent problems with other	4.64	Strongly Agree

workers.		
20. I am mindful of how my behavior affects other people's jobs.	4.67	Strongly Agree
Average	**4.68**	**Strongly Agree**

The teachers strongly agreed with their organizational behaviors in terms of civil virtue as shown by the mean scores of 4. 68. All of the respondents rated strongly agreed on all the indicators in civil virtue: I consider the impact of my actions on coworkers with 4.67; I try to avoid creating problems for co-workers with 4.74; I take steps to try to prevent problems with other workers with 4.64; and I am mindful of how my behavior affects other people's jobs with 4.67.

Teachers have high perceptions of civil virtue, which includes gathering information about what is occurring in their schools and partaking in the political life of their schools as responsible, and constructive individual.

Table 16. *Regression Analysis of Empowerment on Organizational Behaviors*

Variables	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
(Constant)	0.943	0.36		2.62	0.01
Teacher empowerment	0.234	0.061	0.264	3.86	0.000
Organizational commitment	0.076	0.076	0.078	1.005	0.317
Professional commitment	0.457	0.054	0.65	8.41	0.000
r-square = .521 f-value = 39.087 p-value = .000 alpha = .05					

Regression analysis was conducted to examine the independent constructs as the influence of empowerment with the dependent variable: teachers' organizational behaviors.

Results of the regression analysis in Table 16 reveal that teacher empowerment, organizational commitment, and professional commitment have Beta coefficients of 0.264, 0.078, and 0.65 respectively with a p-value, which does not exceed the 0.05 alpha. Data denotes an F value of 39.087 with a significant value of 0.000 is lower than the alpha 0.05, which means that the predictor variable collectively accounts for a statistically significant proportion of the variance in the criterion variable of teachers' organizational behaviors.

Since the associated probability does not exceed .05 alpha, it is, therefore, safe to conclude that empowerment has a significant influence on teachers' organizational behaviors. Hence, the decision is to reject the null hypothesis, which states that empowerment has no significant influence on teachers' organizational behaviors.

DISCUSSION

This section summarizes and illustrates the results that the researchers have gathered from the study.

1. Empowerment

The results show that teachers have a very high level of trust in their schools which according to Hidiruglo (2017), it signifies that employees who perceive themselves as having high levels of empowerment are more motivated to work toward corporate goals and believe that doing so will help them meet their own needs.

In this outcome, it is evident that teachers perceive their institutions as supportive of their professional development. This finding aligns with Kiral (2020) research, which indicates that empowering teachers involves granting them greater autonomy, involving them in decision-making processes, fostering a sense of community within classrooms, encouraging ongoing professional and personal growth, and integrating teachers' unique circumstances.

The research suggests that when an employee feels appreciated and experiences a sense of achievement, there is a higher likelihood of enhancing their creativity and critical thinking abilities (Agyemang & Ofei, 2018). Empowering workers by granting them greater autonomy in their roles allows them to respond quickly to changes and devise solutions to meet customer needs (Appelbaum et al., 2018).

2. Organizational Behavior

According to Ergün (2017), teachers exhibit moderate levels of moral commitment, whereas their calculative and alienative commitments are below the moderate threshold. Similarly, Ziblim and Ertürk, (2022) categorized teachers' commitment into three levels: high for moral commitment, and lower levels for calculative and alienative commitments.

The results of this study revealed that teachers' organizational commitment in terms of alienative commitment was the lowest average and least preferred type of commitment in organizations. This was due to compulsory commitment, where a person does not feel any commitment to the organization and is forced to remain in the organization. In this sense, it might be said that teachers support their institutions out of a sense of duty rather than obligation. A study by Yavuzkiç (2022) found that teachers had extremely high levels of moral and calculative commitment while having extremely low levels of alienative commitment.

The findings suggest that teachers expressed satisfaction and value for their jobs. Job satisfaction refers to the state of being content with one's work and desired outcomes (Hoy & Tarter, 2011, as cited in Hidoruglo, 2017). Consistent with this data, teachers indicated a considerable degree of professional contentment or satisfaction with their profession.

The findings of this study align with Tindowen (2019), which similarly concluded that teachers exhibit high levels of empowerment. This consistency underscores a broader pattern of teacher empowerment across various contexts, suggesting a robust trend in the profession. High levels of empowerment among teachers reflect positive organizational dynamics, with teachers feeling valued, efficacious, and influential within their educational environments. Such findings not only validate the importance of empowerment in enhancing teachers' professional experiences but also highlight its role in fostering a conducive and supportive work environment. This agreement between studies strengthens the understanding of empowerment's impact on teachers' attitudes, behaviors, and overall job satisfaction, emphasizing its significance in educational settings.

This indicates that teachers allocated time and attention to their roles and responsibilities. Research has shown that levels of professional commitment among teachers can vary. For instance, Ergen (2017) and Tindowen (2019) observed high levels of professional commitment, Alkhadher and Menge (2020) reported lower levels. The dedication of teachers to their profession is considered a critical factor in the success of education and schools. Decreased professional commitment can also impact school effectiveness by reducing teachers' professional performance or, in severe cases, leading to attrition from their positions (Chaurasia et al., 2020).

The findings mirrored those of previous research indicating that teachers' organizational behaviors tend to be notably strong (Çevik & Can, 2020). Given the significance of organizational citizenship behavior, existing literature underscores its promotion within organizations due to its positive impact on profitability and overall organizational performance (Nawaser et al., 2018). Furthermore, it is noteworthy that involving employees in routine decision-making processes correlates positively with their motivation to engage in citizenship behaviors and enhances overall performance (Khoshnammoghadam, 2017). In summary, the results underscore positive organizational behaviors exhibited by the respondents.

3. Regression Analysis of Empowerment on Organizational Behaviors

Positive organizational behaviors are influenced by teacher empowerment. This circumstance runs concurrently with previous investigations in the literature. (Tindowen, 2019). The results also indicate that the empowerment of the faculty members affected their organizational citizenship behavior, which is consistent with Tindowen's (2019) findings that empowerment affects organizational citizenship behavior.

Furthermore, it suggests that teachers will display organizational behaviors to a greater extent the more empowered they are which is similar to the findings of Posadas et al. (2021).

Also, according to LiMon (2022) organizational behaviors and teachers' organizational commitment have a favorable and significant relationship. Teacher education institutions should support efforts to further enhance the empowerment of their faculty members, as this will correlate to their display of organizational behavior for the benefit of students and the college/university. They should treat their teachers and personnel with transparency and care (Garcia & Subia, 2019).

Lastly, according to Hıdıroğlu & Tanrıöğen (2022), organizational commitment, professional commitment, and organizational citizenship are related. He determined that professional commitment and organizational commitment revealed the relative importance of the predictive variables associated with organizational behaviors. According to the research, schools should take steps to increase teachers' professional and organizational commitments, as well as their moral commitment, which is one of the organizational commitment categories.

4. Implications Drawn from the Findings of the Study

1. The research suggests that teachers who experience empowerment demonstrate positive organizational behaviors within schools. This empowerment stems from feelings of respect, access to professional development opportunities, effectiveness in the classroom, and the ability to influence students and school dynamics. However, they often lack sufficient involvement in institutional decision-making processes. Teachers exhibit positive organizational behaviors such as strong organizational attachment, high work engagement, and positive relationships with administrators.
2. School administrators play a critical role in empowering teachers by effectively utilizing their authority and resources. When teachers feel empowered, they are more inclined to engage in extra-role behaviors. Therefore, administrators should enhance their management and leadership skills to foster empowerment. Schools can benefit from implementing a range of empowerment practices to enhance teachers' professional and moral commitment, such as conducting needs assessments, implementing various initiatives, and offering training.
3. Studies consistently demonstrate that empowerment impacts organizational behaviors. Consequently, school leaders focused on cultivating teachers' organizational behaviors should prioritize empowerment through diverse strategies, policies, and approaches. Empowerment initiatives should aim to enhance teachers' relationships, communication, problem-solving abilities, attitudes, and professional values.

Conclusions

In light of the findings of the study, the following conclusions were drawn:

1. The teachers demonstrated empowerment through their positive perceptions of personal and professional development, indicating a belief in their capacity to manage challenges independently.
2. Teachers exhibited exceptionally high organizational commitment, particularly in terms of moral commitment, reflecting a strong sense of dedication to their profession. Their positive views towards professional commitment suggest a high level of satisfaction in their work. Additionally, teachers consistently displayed various dimensions of organizational citizenship behavior, with acts of kindness being less frequent compared to other behaviors. Overall, teachers exhibited strong organizational behaviors beyond their formal role requirements within school settings.
3. Empowerment significantly influenced teachers' organizational citizenship behavior, highlighting the impact of feeling empowered on their discretionary actions within the organizational context.
4. School administrators play a crucial role in empowering teachers, emphasizing the importance of their involvement in fostering a supportive environment for teacher empowerment.

Recommendations

Based on the study's findings and conclusions, the following recommendations are proposed:

1. To enhance teachers' perceptions of empowerment, particularly in the aspect of self-determination, it is suggested to involve them in decision-making processes related to their work and allow them greater autonomy in performing their duties. Additionally, a qualitative investigation could be conducted to explore how empowerment influences teachers' organizational behavior.
2. To promote increased organizational citizenship behaviors among teachers, policymakers and school administrators should prioritize initiatives that empower teachers, with a specific focus on granting autonomy. It is recommended that all education administrators create an environment that supports teachers in making independent decisions regarding matters that affect them.
3. An extension of this study could involve further exploration of significant teacher and school-related factors predicted by dimensions of teacher empowerment. This expanded research could encompass areas such as teachers' job satisfaction, faculty efficiency, work values, leadership, spirituality, religiosity, and other critical factors.

Compliance with Ethical Standards

The researcher rigorously adhered to established research protocols to uphold ethical standards throughout the study, prioritizing the protection of all individuals and institutions involved. This commitment involved obtaining informed consent from participants, ensuring confidentiality and anonymity of sensitive information, and minimizing potential risks or harm associated with the research process. Ethical considerations were meticulously integrated into all phases of the study, from design and data collection to analysis and dissemination of findings. The researcher took proactive measures to safeguard the rights, welfare, and privacy of participants and institutions, in accordance with applicable guidelines and regulations. By upholding ethical principles, the researcher aimed to foster trust, integrity, and accountability in the research endeavor, maintaining the ethical integrity of the study while upholding professional standards and responsibilities.

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ENGLISH INSTRUCTION THROUGH MODULAR DISTANCE LEARNING AND ITS EFFECTS TO STUDENTS' ACADEMIC MOTIVATION

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ABSTRACT

The coronavirus disease outbreak has greatly affected the educational system, forcing it to shift to modular distance learning (MDL). Thus, students are forced to continue their education at home with the use of self-learning modules (SLMs). This paper attempts to investigate the perception of 231 students from Abundio Agarpao Sr. Memorial High School towards English instruction on MDL and its effect on the learner's academic motivation. The researcher utilized the descriptive-correlational method; used a validated questionnaire; and employed weighted mean, Spearman rank correlation coefficient, and Mann-Whitney U Test. Based on the statistical analysis, the findings revealed that there is generally a Very High students' perception of English instruction as regards MDL. Similarly, a Very High extent of academic motivation was recorded. Moreover a significant and strong relationship between the student's perceptions towards MDL and academic motivation was recorded. Family income was found to influence the student's perception towards MDL but did not affect their academic motivation. Proponent recommends using various motivational strategies to increase students' interest and engagement as well as improve educational policies to accommodate the issues experienced by constituents from low-income households.

Keywords: *Academic Motivation, Modular Distance Learning, English Instruction*

INTRODUCTION

The COVID-19 pandemic has altered daily life, presenting unparalleled public health, political, economic, social, and educational challenges. Educational programs all over the world have been impacted by home confinement and temporary school closures (Reimers and Schleicher, 2020; World Bank Group, 2020). Moreso, educational stakeholders have been affected by the complete transition to distance learning due to physical constraints brought about by this health crisis (Cachón-Zagalaz et al., 2020; Hiraoka & Tomoda, 2020). In order for teachers and students to carry on learning, the United Nations Education Science and Cultural Organization (UNESCO) has appealed to governments to have maximized access to distance learning.

The new normal has led to a paradigm shift in the mode of instructional delivery in the education sector as a means to adapt to the country's current situation (Tria, 2020). The Philippines has made efforts toward developing the skills and expertise of educators and involved stakeholders to facilitate faster progress in this new type of educational setup (Hernando-Malipot, 2020; Guiamalon, et al., 2021).

In connection to this, the Department of Education has introduced a new method of instruction, Modular Distance Learning, where essential learning competencies are addressed through individualized instruction or Self-Learning Modules or SLMs (Anzaldo, 2021). Moreover, to allow schools to implement interventions for bridging learning gaps and ensuring learning continuity through K-12 with multiple learning delivery modalities, DepEd Order No. 012 S 2020: "Adoption of the Basic Education Learning Continuity Plan for SY 2020-2021 in light of the COVID 19 Public Health Emergency" was implemented (DepEd, 2020).

Modular Distance Learning allows more inclusive access to education for students from rural areas and marginalized families (Agaton & Cueto, 2021). However, issues regarding learning content, comprehension, and student engagement have been raised in cases of language teachers during this shift to flexible learning (Tarrayo et al., 2021). On the other hand for students, their learning environment at home was linked to the greatest challenges in their learning (Barrot et al., 2021).

The sudden change of the educational delivery may set forth students a tough way to keep track of their academic motivation. In contrast, a series of studies seek to point out students' learning habits during this pandemic (Trung et al., 2020; Smith et al., 2021), no statistics can prove that the pandemic and some precautionary measures influence the academic motivation and learning of students in different countries.

Although there have been various studies that investigated the different issues experienced by educational stakeholders during this pandemic, there is still limited information available regarding students' perception of Modular Distance Learning and how it affects their motivation towards learning. Thus, the main goal of this study is to look into how Modular Distance Learning affects students' academic motivation in Philippine public secondary schools. This research also aims to determine the methods and

strategies used by educational institutions and the government in assisting students, parents, and teachers who are struggling with this new learning mode.

Research Questions

This study seeks to determine English Instruction Through Modular Distance Learning and its Effects to Students' Academic Motivation during the school year 2020-2021.

Specifically, it seeks to answer the following sub-problems.

1. What is the perception of the students as regards to modular distance learning in terms of:
   1.1 teaching-learning process;
      a. content;
      b. instructional practice?
   1.2 assessment;
      a. encourage time and effort on task;
      b. facilitate the development of self-assessment and reflection on learning;
      c. performance feedback?
   1.3 learner's support;
      a. support from teachers;
      b. support from parents?
2. What is the extent of students' academic motivation?
3. Is there a significant relationship between students' perception as regards to modular distance learning and their academic motivation?
4. Is there a significant difference in students' perception as regards to modular distance learning when grouped according to their profile in terms of:
   4.1 family income; and
   4.2 sex?
5. Is there a significant difference in students' academic motivation when grouped according to their profile?

METHODOLOGY

Research design. The research utilized the descriptive correlational design to describe the perception of students towards Teachers' English Instruction on Modular Distance Learning and its effect on students' motivation. On the other hand, it will be correlational because the mentioned variables will be correlated.

Research environment. The locale of this study is in Bayawan City, also known as " The City of Character" specifically in Barangay Narra, Sitio Gamao, Negros Oriental, 6221, Philippines. The study was participated by students from Abundio Agarpao Sr. Memorial High School. Gamao is a sitio of Barangay Narra, situated 23 kilometers away from the heart of Bayawan City, it has electricity and a potable water supply. It has a

complete set of elected barangay officials under the leadership of Barangay Captain Hon. Nicolas D. Aragon and barangay councilors are working for the improvement of the community.

Gamao High School, now Abundio Agarpao Sr. Memorial High School, is a newly established school in Gamao, Narra Bayawan City, and the second high school in Barangay Narra with a school site occupying a lot of 10, 000 square meters, donated by the heirs of the late Abundio Agarpao Sr . The school has 16 faculty and staff. Abundio Agarpao Sr. Memorial High School consists of 230 males and 304 girls with a total of 534 enrolment as of February 2021.

Research respondents. The respondents of the study are the students of Abundio Agarpao Sr. Memorial High School with 230 males and 304 females or a total of 534 enrolment as of February 2021. A total of 231 were sampled as respondents. The students were chosen using the systematic random sampling method in which every second student in the list is part of the study.

The following is the distribution of the students:

Grade Level	Population	No. of Sampled Students
Grade 7	180	57
Grade 8	114	49
Grade 9	112	48
Grade 10	84	36
Grade 11	50	22
Grade 12	44	19
Total	534	231

Research instrument. A researcher-made questionnaire was used in this study. The researcher used the questions that were developed for this study. The questions were based on the feedback received from each of the listed problems. The first part of the study included data collected from the questionnaire based on the students' perception towards English instruction in MDL and their perceived academic motivations. This part addresses the issues on the teaching-learning process, assessment, and learner's support as perceived by students and their influence on academic motivation. The second part included analyzing the data based on students' profiles or demographics, specifically sex and family income, and how these affect their perception of English instruction and academic motivation.

To ensure content validity, the entire questionnaire was presented to three experts in the field of English. The prepared questions were checked to see if they were compatible with the study's basic problems. The recommendations of the experts were taken into consideration in revising and finalizing the questionnaire used in this study.
To ensure reliability, a dry run was conducted. Thirty students were asked to participate. The Cronbach's alpha test was used to determine the questionnaire's reliability. This was measured to ensure the questionnaire's internal accuracy and reliability. It is a measure of the extent to which all the variables in the scale are positively related to each other and

its theoretical value varies from 0 to 1. Higher values of alpha are more desirable and a value of 0.70 is considered acceptable.

The reliability coefficients after the dry run are the following:
(a) content: 0.834;
(b) instructional practice: 0.935;
(c) encourage time and effort in class: 0.800;
(d) facilitate the development of self-assessment and reflection on learning: 0.923;
(e) performance feedback: 0.924;
(f) support form teachers: 0.863
(g) support from parents: 0.916
(h) support from peers: 0.629 – rejected; reliability <0.70
(i) academic motivation:0.917

The following tools were used by the researcher in analyzing the data :

Weighted mean. This was used in getting the extent of students' perception of their (a) Teaching-Learning Process: Content and Instructional Practice, (b) Assessment: Encouragement on time and effort on tasks; facilitation of the development of self-assessment and reflection on learning; and performance feedback, and (c) Learner's Support: Parent's and Teacher's Support.

Spearman Rank Correlation Coefficient. This was utilized to identify the degree of relationship between the students' perception towards teachers' English instruction in modular distance learning and their academic motivation. The test was selected since the data were on an ordinal scale.

Mann- Whitney U Test. This was used in identifying the significant difference in the students' perception towards teachers' English instruction in MDL and extent in academic motivation when grouped according to their profile in terms of family income and sex. The test was utilized since the data were on ordinal scale.

Scope of the study. This study focuses on determining the extent of students' perception on Teachers' English Instruction through modular distance learning and its relationship with students' academic motivation. The respondents of this study are the Junior and Senior High School students of Abundio Agarpao Sr. Memorial High School, Bayawan City Division.

Limitations of the study. In this study, students' perception of modular learning is limited to their views on the teaching-learning process, assessment, and learner's support. Additionally, the influence of students' demographics (sex and family income) on their perception of English instruction in the MDL setup was also analyzed. Other variables that may have affected the respondent's answers that were beyond the proponent's control, e.g. physical, emotional, and mental state, are considered as limitations in the study. These limitations are also applicable to the measurement of the student's extent of academic motivation.

This study is limited to the Grade 7 to Grade 12 students of Abundio Agarpao Sr. Memorial High School. Any variable differences in the quality of English modules between grade levels are not measured and are also treated as a limitation of the study. This study did not include specific perceptions of students in different grade levels as students were treated as a homogenous group. Thus, any conclusion is limited to the perception of Abundio Agarpao Sr. Memorial High School's students as a whole and not as separate grade levels.

RESULTS

Table 1.1 *Perception of the Students as Regards Modular Distance Learning in Terms of Teaching-Learning Process (n = 231)*

Teaching-Learning Process	$w\bar{x}$	VD	EoP
Content			
In the formulation of content, the teacher...			
1. selects meaningful content that meets the needs of students.	6.54	SA	VH
2. gives practice exercises that encourage the integration of learned concepts to real-life settings.	6.41	SA	VH
3. formulates additional activities in the form of learning worksheets.	6.31	SA	VH
4. devises differentiated activities based on students' multiple intelligences, learning styles, and readiness levels.	6.28	SA	VH
5. uses various motivational strategies (i.e., advance organizers, puzzles, games) to hook the students' interest and engagement.	6.08	A	H
Composite	6.32	SA	VH
Instructional practice			
The English instruction, the teacher...			
1. provides instructions in written works, performance tasks, and practice exercises.	6.45	SA	VH
2. constantly monitors students' academic engagement and learning progress.	6.32	SA	VH
3. frequently reminds students of the execution and completion of given activities in the SLM.	6.30	SA	VH
4. logically develop lessons/activities as part of the instructional elements.	6.26	SA	VH
5. immediately responds to students' queries related to learning content and engagements.	6.23	SA	VH
Composite	6.31	SA	VH

Legend: Scale	**Verbal Description (VD)**	**Extent of Perception (EoP)**
6.15 – 7.00	Strongly Agree (SA)	Very High (VH)
5.29 – 6.14	Agree (A)	High (H)
4.43 – 5.28	Somewhat Agree (SoA)	Somewhat High (SoH)
3.57 – 4.42	Neither Agree/Disagree (NAD)	Moderate
2.17 – 3.56	Somewhat Disagree (SoD)	Somewhat Low (SoL)
1.85 – 2.70	Disagree (D)	Low (L)
1.00 – 1.84	Strongly Disagree (SD)	Very Low

Table 1.2 *Perception of the Students as Regards Modular Distance Learning in Terms of Assessment (n = 231)*

Assessment	$w\bar{x}$	VD	EoP
a. Encourage Time And Effort On Task			
The teacher...			
1. provides content and assessment that is logically organized and arranged from simple to complex, observable to abstract, etc.	6.44	SA	VH
2. allows me to seek help and assistance in doing assigned tasks.	6.39	SA	VH
3. devises instructional design that contributes to the timely attainment of learning tasks.	6.29	SA	VH
4. sets specific objectives and attainable goals in the given tasks to be completed in the assigned time period.	6.28	SA	VH
5. applies self-directed techniques, learning tasks, and formative assessments.	6.26	SA	VH
Composite	6.33	SA	VH
b. Facilitate The Development Of Self-Assessment And Reflection On Learning			
The teacher...			
1. sets criteria or rubrics that serve as guides on the execution of perfomance tasks.	6.45	SA	VH
2. prepares instructional activities that are intellectually-stimulating and develops my higher-order thinking skills.	6.39	SA	VH
3. gives assessment activities that ensure my active engagement as a learner.	6.33	SA	VH
4. formulates assessments that are aligned with specific objectives and learning contents.	6.32	SA	VH
5. enables me to apply self-directed techniques to develop my metacognitive skills and foster independent learning.	6.22	SA	VH
Composite	6.34	SA	VH
c. Performance Feedback			
The teacher...			
1. provides regular learning feedback to students through written notes	6.33	SA	VH
2. delivers accurate information on students' scores and grades.	6.33	SA	VH
3. establishes structures and systems through worksheets and performance task with rubrics.	6.30	SA	VH
4. gives constant updates through communicating with parents.	6.26	SA	VH
5. creates feedback routines on student learning.	6.26	SA	VH
Composite	6.30	SA	VH

Legend: Scale	**Verbal Description (VD)**	**Extent of Perception (EoP)**
6.15 – 7.00	Strongly Agree (SA)	Very High (VH)
5.29 – 6.14	Agree (A)	High (H)
4.43 – 5.28	Somewhat Agree (SoA)	Somewhat High (SoH)
3.57 – 4.42	Neither Agree/Disagree (NAD)	Moderate
2.17 – 3.56	Somewhat Disagree (SoD)	Somewhat Low (SoL)
1.85 – 2.70	Disagree (D)	Low (L)
1.00 – 1.84	Strongly Disagree (SD)	Very Low

Table 1.3 *Perception of the Students as Regards Modular Distance Learning in Terms of Learners' Support (n = 231)*

Learner's support	$w\bar{x}$	VD	EoP
Support from Teachers:			
The teacher...			
1. strongly encourages my parent or guardian to monitor my learning progress and developments.	6.36	SA	VH
2. willingly or openly answers my parent's queries related to my academic engagements.	6.23	SA	VH
3. regularly conducts quarterly orientation and timely delivers reports on my learning progress.	6.22	SA	VH
4. contanstly contacts my parent or guardian to inform and follow-up my instructional engagements.	6.22	SA	VH
5. evidently provides activities that involve my family's participation and encourage their assistance on given tasks.	6.12	A	H
Composite	6.23	SA	VH
Support from Parents:			
The parents/guardians...			
1. regularly attends meetings set by my teacher for updates on my academic standing	6.44	SA	VH
2. frequently checks and reviews if I finish all given activities in the SLM before submitting it to the teacher. .	6.35	SA	VH
3. directly communicates with my teacher with regards to my school undertakings.	6.34	SA	VH
4. constantly asks my teacher if I miss any given activity.	6.31	SA	VH
5. timely gets and returns my module on weekly basis.	6.29	SA	VH
Composite	6.35	SA	VH

Legend: Scale	**Verbal Description (VD)**	**Extent of Perception (EoP)**
6.15 – 7.00	Strongly Agree (SA)	Very High (VH)
5.29 – 6.14	Agree (A)	High (H)
4.43 – 5.28	Somewhat Agree (SoA)	Somewhat High (SoH)
3.57 – 4.42	Neither Agree/Disagree (NAD)	Moderate
2.17 – 3.56	Somewhat Disagree (SoD)	Somewhat Low (SoL)
1.85 – 2.70	Disagree (D)	Low (L)
1.00 – 1.84	Strongly Disagree (SD)	Very Low

Table 1.4 *Summary Table on the Extent of Perception of the Students as Regards Modular Distance Learning (n = 231)*

Variables	$w\bar{x}$	Extent of Perception
Teaching-Learning Process		
Content	6.32	Very High
Instructional Practice	6.31	Very High

Composite	6.32	Very High
Assessment		
Encourage Time & Effort on Task	6.33	Very High
Facilitate the Development of Self-Assessment and Reflection on Learning	6.34	Very High
Perfomance Feedback	6.30	Very High
Composite	6.32	Very High
Learner's Support		
Support From Teachers;	6.23	Very High
Support From Parents?	6.35	Very High
Composite	6.29	Very High

Legend:	Scale	Extent of Perception (EoP)
	6.15 – 7.00	Very High (VH)
	5.29 – 6.14	High (H)
	4.43 – 5.28	Somewhat High (SoH)
	3.57 – 4.42	Moderate
	2.17 – 3.56	Somewhat Low (SoL)
	1.85 – 2.70	Low (L)
	1.00 – 1.84	Very Low

Table 2. *Extent of Student's Academic Motivation*

In doing my modules, I...	$w\bar{x}$	VD	EoM
1. comply all given activities, written works, and performance tasks as part of the SLM's lesson content.	6.30	SA	VH
2. feel excitement in getting and returning my module in every posted schedule. .	6.29	SA	VH
3. put premium importance in getting high marks on my completed tasks and assignments.	6.26	SA	VH
4. exert maximum effort to achieve desirable learning outcomes and results.	6.25	SA	VH
5. feel happiness in doing written works and other variety of instructional activities.	6.23	SA	VH
6. enjoy intellectual challenge in doing academic tasks and activities reflected in the SLM.	6.23	SA	VH
7. formulate self-reflective questions to further my understanding on learning content and concepts	6.19	SA	VH
8. engage in thought provoking and intellectually stimulating activities and assessment exercises.	6.18	SA	VH
9. feel satisfied with instructional activities that enable me to track my progress and mastery of the target competencies.	6.18	SA	VH

10. demonstrate satisfaction in the completion of every assigned task in the module.	6.13	A	H
Composite	6.22	SA	VH

Legend:

Scale	Verbal Description (VD)	Extent of Motivation (EoM)
6.15 – 7.00	Strongly Agree (SA)	Very High (VH)
5.29 – 6.14	Agree (A)	High (H)
4.43 – 5.28	Somewhat Agree (SoA)	Somewhat High (SoH)
3.57 – 4.42	Neither Agree/Disagree (NAD)	Moderate
2.17 – 3.56	Somewhat Disagree (SoD)	Somewhat Low (SoL)
1.85 – 2.70	Disagree (D)	Low (L)
1.00 – 1.84	Strongly Disagree (SD)	Very Low

Table 3. *Relationships between Students' Perception as Regards Modular Distance Learning and Their Academic Motivation (n = 231)*

Variables Correlated to Students' Motivation	r_s	p-value	Decision	Remark
Teaching-Learning Process				
Content	0.656	0.000	Reject H_{o1}	Significant
Instructional Practice	0.647	0.000	Reject H_{o1}	Significant
Overall	0.623	0.000	Reject H_{o1}	Significant
Assessment				
Encourage Time & Effort on Task	0.703	0.000	Reject H_{o1}	Significant
Facilitate the Development of Self-Assessment and Reflection on Learning	0.707	0.000	Reject H_{o1}	Significant
Perfomance Feedback	0.719	0.000	Reject H_{o1}	Significant
Overall	0.775	0.000	Reject H_{o1}	Significant
Learner's Support				
Support From Teachers;	0.759	0.000	Reject H_{o1}	Significant
Support From Parents?	0.750	0.000	Reject H_{o1}	Significant
Overall	0.750	0.000	Reject H_{o1}	Significant

Level of significance = 0.05

Legend:	**Value of r**	**Strength of Relationship** (Statistical Correlation, 2009)
Between	± 0.50 to ± 1.00	± strong relationship
Between	± 0.30 to ± 0.49	± moderate relationship
Between	± 0.10 to ± 0.29	± weak relationship
Between	± 0.01 to ± 0.09	± very weak relationship

Table 4. Analysis Table on the Difference in Students' Perception as Regards Modular Distance Learning when grouped according to Their Profile

Variables	N	Median	Mean Rank	U	p-value	Decision	Remark
Family Income							
Less than 5,000	166	6.39	109	4,232	0.011	Reject H_{o2}	Significant
5,000 and greater	65	6.49	134				
Sex							
Male	93	6.42	119	6,162	0.610	Fail to reject H_{o2}	Not significant
Female	138	6.39	114				

Mann-Whitney U Test at 0.05 level of significance

Table 5. Analysis Table on the Difference in Students' Academic Motivation when grouped according to Their Profile

Variables	N	Median	Mean Rank	U	p-value	Decision	Remark
Family Income							
Less than 5,000	166	6.30	112	4,707	0.131	Fail to reject H_{o3}	Not significant
5,000 & greater	65	6.40	127				
Sex							
Male	93	6.30	116	6,382	0.944	Fail to reject H_{o3}	Not significant
Female	138	6.30	116				

Mann-Whitney U Test at 0.05 level of significance

DISCUSSION

Table 1.1 presents the data on the perception of the students on modular distance learning in terms of the Teaching-Learning process which includes Content and Instructional Practice. The results reveal that the extent of students' perception of the Content is Very High for items 1-4 as evidenced in the weighted mean with values ranging from 6.28 to 6.54. On the other hand, a High extent of perception was found for item 5 (use of various motivational strategies) with a weighted mean of 6.08. Therefore, it can be deduced that in the formulation of the content of the English modules, the teacher was able to select meaningful content that met the needs of students and gave tasks that encouraged learning. This is in line with the work of Williams & Williams (2011), where they suggest that the content of instructional materials should not only be accurate and

timely but also relevant and useful to the lives of the students. This is also discussed by Simonson et al. (2011) as they claim that correct instructional design that applies research-based principles towards educational practice is essential towards effective distance education. Teachers need to consider a lot of motivational factors when designing supplemental learning resources (Jimenez, 2020).

Furthermore, it was claimed that diverse distance learning activities stimulate student motivation and lead to self-learning (Lassoued et al., 2020). Rapanta et al. (2020) also suggest that activities that are based on a mix of different design approaches, which met the readiness levels of students and are based on authentic contexts, should be considered for distance learning to increase student engagement. Thus, these efforts could be done to increase the extent of perception for item 5.

Similarly, in terms of Instructional Practice, the data revealed that students' perception is Very High with weighted mean values ranging from 6.23 to 6.45 and an overall composite weighted mean of 6.31. This indicates that the students found that in terms of teaching instruction, the teacher was able to provide instructions for tasks, monitor them in the completion and progress of their activities, and immediately respond to their queries. A study by Filippello et al. (2019) has shown how learning activities that promote consideration of students' perspectives and inputs delivered the greatest effectiveness when it comes to encouraging mastery and persistence among students.

In summary, these findings on the Teaching-Learning process are in agreement with Martin (2020), when he claimed that high-quality instruction and content is needed to reduce the problem associated with poor impulse control, like the abandonment of schoolwork for gaming or social messaging, among students and keep learners engaged and on track with their tasks.

Table 1.2 presents the data on the perception of the students on modular distance learning in terms of Assessment which includes the teacher's (a) encouragement on spending time and effort on tasks;(b) guidance on student's self-assessment and reflection on learning, and (c) performance feedback.

In terms of encouraging time and effort on tasks, the data reveal that Very High perception is present with the weighted mean values ranging from 6.26 to 6.44 and a composite weighted mean of 6.33. This means that the teacher provides content and assessment that are logically organized and devised an instructional design that contributes to the timely attainment of tasks. Moreover, it also indicates how the teacher has effectively set attainable goals within specific timeframes. This conclusion matches the findings of Martin (2020) who asserts that lessons need to be clear and well structured, and at the same time, delivered in manageable chunks such that students will have enough time to do the tasks and for teachers to give timely feedback. In terms of devising instructional designs that are attainable, Cahapay (2020) has proposed three considerations in determining the essential contents for learning which she enumerates as significance, relevance, and utility.

Furthermore, in the area of facilitating the development of self-assessment and reflection on learning it is indicated that perception is also Very High with weighted mean

values ranging from 6.22 to 6.45 and a composite weighted mean of 6.34. This indicates that the teacher was able to effectively prepare instructional activities and formulate assessments that encouraged the development of autonomy or self-direction and fosters independent learning. This is affirmed by Filippello et al. (2019) whose study argues that learning activities should be structured in a way wherein it fosters autonomy and self-regulation through the consideration of student's perspectives and the addition of support elements that encourage self-initiation and management. Similarly, Dickhauser et al. (2011), asserts that the autonomy-support of teachers which encourages choice and self-initiation can develop a positive attitude towards academic tasks and problem-solving strategies when facing obstacles.

Item 1 has the highest weighted mean of 6.45. This shows how the respondents value set criteria or rubrics as guides in the execution of tasks. This is in correspondence to the suggestion of Rapanta et al (2020) that self-regulation should be a part of the assessment. They explain that the self-paced, asynchronous activities with the clear indicated assessment process for participation, like self-reflections or portfolios, are good means for students to account for the time and effort they need to adapt to the new learning situation.

On the other hand, the area in terms of performance feedback has a rating of Very High with weighted means values ranging from 6.26 to 6.33 with a composite weighted mean of 6.30. It can be deduced that the teacher was able to provide regular learning feedback and deliver accurate information on students' scores and grades. Moreso, this is indicative of established feedback routines on student learning and constant communication of updates through parents. Costello and Crane (2013) encourage actions towards increasing the impact of feedback in a positive and efficient manner as learner-centered feedback is an important component of the learning process. Funa & Talaue (2021) also established the importance of assessment and evaluation in modules towards the development of independence and responsibility towards one's own learning through the provision of opportunities to learners to express and develop new understandings.

Table 1.3 shows the perception of students to Modular Distance Learning as regards the support they get from their parents and teachers. Generally, Very High perception of Teacher's support is observed from item 1 to 4 as weighted mean values range from 6.22 to 6.36 and a composite weighted mean of 6.23. This means that teachers manifested positive responses and willingness towards inquiries and clarifications related to the topics or lessons. Engagement with parents was also done in relation to learning procedures and feedback. Item 5 has the lowest weighted mean with 6.12 and is also the only item rated as High in the perception index.

These findings are in correspondence with the results of the study done by Funa and Talaue (2021) wherein they acknowledged the efforts of teachers to mitigate the consequences of inequalities among students through the provision of alternative activities, deadline adjustments, the opening of various communication and support channels, and requesting assistance from parents with regards to their children's workload. These extensions and accommodations made by teachers have become vital

to distance education in the time of this pandemic. Similarly, Castroverde & Alcala (2021) recognized the initiatives done by teachers to cope with the challenges brought by modular distance modality. They characterized this in the way teachers have innovated teaching strategies that adapt to changes brought about by the new normal trend in education, being flexible and optimistic, and through their provision of alternative plans in the learning process.

Similarly, the student's extent of perception on modular distance learning as regards to Parent's support is also Very High. The weighted mean values for it ranged from 6.29 to 6.44 and a composite weighted mean of 6.35. These findings indicate how parents played an important role in correspondence with teachers regarding academic standing, performance, and updates.

Moreover, parent's support receiving a higher composite weighted mean of 6.35 when compared to teacher's support (6.23). This coincides with how Tus (2021) and Djafar et al. (2021) claims that parents have taken the forefront and a more active role in the child's education. This is also indicative of the parent's fulfilment of their roles in making sure that their children are doing their tasks and proactive measures have been made by them to accommodate learning at home. Additionally, this is also in correspondence to the publication of Mora and Escardibul (2016) which indicates that the environment at home influences the tendency of parents to participate in student's education at home which in turn affects the academic success of the child.

Overall, very high learner's support will have a positive influence on the student's perceived academic motivation. As suggested by the Self-Determination Theory, support from significant adults, such as parents and teachers, is essential for a student's well-being (Ryan & Deci, 2017).

Table 1.4 summarizes the student's extent of perception as regards to modular distance learning in terms of (a) teaching-learning process, (b) assessment, and (c) learner's support. The results present that students' perception in all the identified areas of modular distance learning is very high with the following composite means: (a) content: 6.32; (b) assessment: 6.32, and (c) learner's support: 6.29. The very high perception of students on all variables indicates active and successful execution of learning-teaching practice and assessment by teachers who prepare the modules and by parents who bear high responsibility in supervising academic completion of work and tasks at home. Additionally, this also means that students are comfortable in modular distance learning and have great autonomy and self-direction which can mitigate issues brought by the context of distance learning. Simonson et al. (2011) affirm this with their reports that well-designed courses produce more positive learning outcomes and are influential to overall student satisfaction.

Moreover, this is in correspondence to the claims by Wei and Chou (2020) that learners' perceptions of self-efficacy in distance learning are affected by their learning readiness. Learners with a high level of self-efficacy toward online learning performed better than those with low levels of self-efficacy.

Table 2 shows the data on students'extent of academic motivation as regards to Modular distance learning. Generally, the extent of motivation is Very High given that the weighted mean values for items 1-9 range from 6.18 to 6.30, and the composite mean is at 6.22. Item 10, which characterizes satisfaction in the completion of every assigned task in the module is rated High with a weighted mean of 6.13. This level of motivation is rooted on the student's (a) goal of complying all required activities and written works; (b) interest in getting high marks; (c) enjoyment in doing written works and other activities. Moreover, the data also indicates that the modules allowed them to track their progress and mastery, and exert maximum effort to achieve their target competencies. This result is affirmed by the study done by Tipon et al. (2021) where they also found out that senior high school motivation towards distance learning is high.

Furthermore, these findings are in line with the work of Williams& Williams (2011), where they specified that student motivation is impacted by five key ingredients which include the student (one that has access, ability and interest in education), teacher (well-trained, dedicated, and responsive to their students), content (accurate, timely, and stimulating), method/process (inventive, encouraging, and beneficial), and environment (accessible, safe, positive, and personalized). They also claim that the extent of learning is dependent on the extent of motivation.

Table 3 presents the data in identifying the relationship between the students' perception as regards to modular distance learning and their academic motivation. As shown, all paired variables have computed rs-values that are greater than 0.50 and all p-values (0.000) are less than the level of significance (0.05). These findings allow rejection of the null hypothesis. This means that a strong and significant relationship exists between the following: (a) teaching-learning activities and academic motivation; (b) assessment and academic motivation; and (c) learners' support and academic motivation. This also implies that the higher the teaching-learning activities, assessment, and learners' support that the students perceive, the higher also is their academic motivation.

Sison et al. (2021) affirms these results in their study where they found a significant relationship between self-efficacy and academic motivation. Moreover, this further asserts their claim that having good self-efficacy can motivate students to do well in school and increase their academic success. This is also in correspondence with Avila & Genio (2020) whose study shows that students can be motivated in distance learning through proper support, assistance, and encouragement.

High academic motivation, in this context, can be attributed to the presence of very high perception on all variables. Very high structure and dialogue has led to very high autonomy. This can be attributed to the fact that, despite having a high structure in the modular distance learning processes, teachers are required by DepEd Order No. 32 s. 2020: "Guidelines on the Engagement of Services of Learning Support Aides to Reinforce the Implementation of the Basic Education Learning Continuity Plan in Time of COVID-19 Pandemic" to frequently communicate to parents and learners on updates and feedback on their learning performance. Thus, the results do not necessarily go against Moore's transactional distance theory.

A study done by Tipon et al. (2021) also found a significant relationship between self-efficacy and academic motivation. This strong relationship between the Teaching-learning process, Assessment, and Learner's support as revealed in this study, is in correspondence to the study of Li et al. (2016), who suggests that as learners become more satisfied with teaching materials, assessment strategies, and workload they become more satisfied with the overall learning experience. Specifically, the high dialogue perception, which is supported by the strong relationship between academic motivation and support from teachers, is also supported by Cavus (2015) wherein he claims that it is less difficult for learners to ask questions to teachers individually and resolves the issue experienced in traditional learning setup. Moreover, Zeichner (2018) also agrees with the result that feedback results in better academic motivation.

This study has reaffirmed the shared responsibility of teachers and parents, in the context of this pandemic, on the learner's academic success as suggested by the significant relationship of learners' support towards their very high perception of modular distance learning. Gumapac et al. (2021) has conducted a study that reinforces this result, as they claim that parents have become highly engaged in sustaining motivation, coaching and tutoring, and monitoring the student's compliance data. Similarly, Tus (2021) also asserts that, despite not having a significant relationship, parental involvement, in terms of providing guidance and supervision in children's academic learning, is influential to their academic performance.

Table 4 reveals the data in analyzing the difference in the perceptions of the students as regards modular distance learning when they are grouped according to their profile. With regards to family income, it shows that the p-value (0.011) is less than the level of significance (0.05). This finding warrants rejection of the null hypothesis. This means that the perceptions of the students differ significantly. As seen in the data, students whose family income is 5,000 and greater have higher values of median and mean rank than those students from families earning less. This signifies further that students with higher family income have better perceptions about modular distance learning than those with lower family income. This is in agreement with the findings of Girik (2020) wherein despite the positive perception of students towards distance learning, financial issue experienced by students is identified as one of the commonly reported problems related to education during the pandemic.

Although environmental conditions of households and parents' literacy are not part of the variables in this study, the researcher can conclude that the economic situation clearly affects the perception of students with regard to modular distance learning. This is supported by many researchers who claim that socio-economic stressors negatively affected students from low-income families more, compared to their counterparts, when it comes to education during this pandemic. Rodriguez-Planaz (2020) has shown in her study that low-income students were generally more likely to be negatively-affected in their education in the midst of the Covid-19 pandemic brought about by challenges related to lack of internet, childcare responsibilities, health issues, and stress. Cleofas and Rocha (2020) also agrees with this claim, as they assert that students from low socioeconomic localities have higher mental distress due to their limited financial capacity to satisfy their

educational needs during this pandemic. Additionally, a study by Llamer (2021) also found that unfavorable outcomes resulted from the adverse economic impacts brought by the pandemic on parent's livelihoods, towards their childrens' perception of the new modes of learning.

Furthermore, as shown in Table 4, distance learning favors students with better economic status. Economic constraints can affect learners' perception of distance learning as financing of distance education is an obstacle parents have to face which includes purchasing technology in order to aid learning at home (Danchikov et al, 2021). Greater attention is needed for low-middle-income households with poor access to technology, food, health, and security in terms of policymaking in distance education to help alleviate from these demographic-specific issues (Agaton & Cueto, 2021).

The data also divulge that sex is not significantly related to their perception of modular distance learning ($p = 0.610 > \alpha = 0.05$). This suggests that the student's sex is not a factor in the perception of modular distance learning. Moreover, this is a good indicator that respondents had similar experiences towards modular distance learning and have the similar perceived extent of academic motivation regardless of sex. It also shows how the academic curriculum and English instructional practice were effective and reliable to students regardless of the mentioned demographic.

In summary, family income influenced the student's perception of modular distance learning and is not true when grouped according to sex. Engzell et.al (2020) affirms this with their baseline data showing that learning loss is more pronounced in students from disadvantaged homes and that they found little to no evidence that this effect differs in terms of sex. Therefore, efforts from both DepEd and other government bodies should be made to alleviate constituents gravely affected economically by this pandemic to improve this perception of students in low-income families on modular distance learning.

Table 5 reflects the data in analyzing the difference in the academic motivation of the students when they are grouped according to their profile. The data reveal that all p-values for family income ($p = 0.131$) and sex ($p = 0.944$) are greater than the level of significance (0.05). These figures will not warrant rejection of the null hypothesis. This means that there is no significant difference in the academic motivation of the students when grouped according to their income and sex. This connotes that regardless of their financial status and sex, the students manifest the same level of academic motivation.

The lack of significant difference between these demographics towards learner's motivation is in correspondence to Li et al. (2016), wherein they claimed that despite the diversity of learners, underlying learning experiences are similar. The results indicate that effective teaching practice and the positive relationship between teachers and parents in the context of MDL have positively impacted students' motivation.

Summary of Findings

From the data gathered in the study, the following salient findings are hereby presented.

1. Student's Perception of Modular Distance Learning.

The data disclosed that students' perception on modular distance learning as regards to English learning and instruction in terms of the following areas are as follows:

1.1 teaching-learning process;

a. content: $w\bar{x}$= 6.32 (Very High);

b. instructional practice: $w\bar{x}$= 6.31 (Very High)

1.2 assessment;

a. encourage time and effort on task: $w\bar{x}$= 6.33 (Very High);

b. facilitate the development of self-assessment and reflection on learning: $w\bar{x}$= 6.34 (Very High);

c. performance feedback: $w\bar{x}$= 6.30 (Very High);

1.3 learner's support;

a. support from teachers: $w\bar{x}$= 6.23 (Very High); and

b. support from parents: $w\bar{x}$= 6.35 (Very High)

2. Student's extent of academic motivation.

The results revealed that the student's extent of academic motivation was Very High ($w\bar{x}$= 6.22).

3. Relationship between Students' Perception as Regards to Modular Distance Learning and Their Academic Motivations

The data revealed that a significant and strong relationship existed between the academic motivation of students and the following variables:

Teaching-Learning Process

1.1 Content: r_s = 0.656; p=0.000;

1.2 Instructional Practice: r_s = 0.647; p=0.000;

overall; r_s = 0.623; p=0.000

Assessment

1.3 encourage time and effort on task: r_s = 0.703; p=0.000;

1.4 facilitate the development of self-assessment and reflection on learning: r_s = 0.707; p=0.000;

1.5 performance feedback: r_s = 0.719; p=0.000;

overall: r_s = 0.775; p=0.000;

Learner's Support

1.6 support from teachers: r_s = 0.759; p=0.000;

1.7 support from parents: r_s = 0.750; p=0.000;

overall: r_s = 0.750; p=0.000

4. Difference in Students' Perception as Regards Modular Distance Learning When Grouped According to their Profile

4.1 family income: p-value = 0.011 (Significant in favor of the higher income families)
4.2 sex: p-value = 0.610 (Not Significant)

5. Difference in Students' Academic Motivaton When Grouped According to Their Profile.

1.1 family monthly income: p-value = 0.131 (Not Significant)
1.2 sex: p-value = 0.944 (Not Significant)

Conclusions

On the basis of the findings, the following conclusions are produced:

1. The student's perception as regards to modular distance learning in terms of the teaching-learning process, instructional practice, and assessment are very high.
2. The extent of students' academic motivation is very high.
3. There was a strong and significant relationship between students' perception as regards to modular distance learning and their academic motivation.
4. There was a significant difference in students' perception as regards to modular distance learning when students were grouped according to family income, while there was no significant difference when grouped by sex.
5. There was no significant difference between students' academic motivation and their profile.

In general, the perception of junior and senior high school students in Abundio Agarpao Sr. Memorial High School toward English instruction on MDL is generally Very High and the student's extent of academic motivation is Very High.

Recommendations

In line with the conclusions made, the proponent of this study would like to recommend the following:

1. Teachers should continue providing quality, effective SLMs and timely learning feedback and assessment as there is high significance between these and academic motivation.
2. Teachers should use various motivational strategies to increase students' interest and engagement as well as provide activities that involve family participation and assistance to improve parental support in student learning.
3. Teachers should be encouraged to give timely performance feedback and assessment to students through their parents.
4. Further research is needed to be done by teachers on the implications of economic standing towards students in this MDL setup.

5. There is a need to improve policies and procedures directed by DepEd in the context of MDL in order to accommodate and improve the experience of those students belonging to low-income households.

Compliance with Ethical Standards

Throughout the study, the researcher demonstrated all relevant ethical considerations. Since humans were selected as research subjects, details were kept confidential. Respondent's integrity and privacy were also respected.

The researcher adopted the ethical guidelines set by Foundation University's Ethics Committee. Significant and ethically correct consultation was observed to ensure that the research subject is evidently sound. To escape censure, the researcher maintained a non-judgmental stance during the interview process. Furthermore, the participants were asked to sign a consent form indicating that they had a complete understanding of the study's risks and benefits.

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ESTADO NG PAGTUTURO NG ASIGNATURANG FILIPINO SA MGA MAG-AARAL SA IKA-SAMPUNG BAITANG NG NOTRE DAME OF JOLO HIGH SCHOOL – KASULUTAN

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ABSTRACT

Ang estado ng pagtuturo ng asignaturang Filipino sa mga mag – aaral sa ika – sampung baitang Notre Dame of Jolo High School – Kasulutan ay isinagawa sa taong 2023-2024. Ito ay tumutukoy sa demograpikong propayl ng mga mag-aaral bilang respondante ayon sa kanilang kasarian, edad, at seksyon. Sinuri din nito ang estado ng pagtuturo ng asignaturang Filipino sa mga mag –aaral ng ika – sampung baitang ng Notre Dame of Jolo High School - Kasulutan ayon sa positibong pamamaraan, negatibong pamamaraan, pamamaraan ng pagtuturo, at kahalagahan ng pagtuturo. Sinuri din ng pananaliksik na ito kung ano ang kinalaman ng demograpikong propayl sa estado ng pagtuturo ng asignaturang Filipino sa mga mag – aaral sa ika – sampung baitang ng Notre Dame of Jolo High School – Kasulutan. Sinuri din sa pananaliksik kung may mahalaga bang kaugnayan sa estado ng pagtuturo ng asignaturang Filipno ang positibong pagtuturo, negatibong pagtuturo, paraan ng pagtuturo, at kahalagahan ng pagtuturo. Random sampling ang istratehiyang ginamit sa pagpili ng mga respondante. Ang talatanungan ay nahahati sa dalawang bahagi. Ang unang bahagi ay tungkol sa demgrapikong propayl ng mga respondante kabilang na ang kanilang kasarian, edad, at seksyon. Ang ikalawang bahagi ay tungkol sa estado ng pagtuturo ng asignaturang Filipino sa mga mag – aaral ng ika – sampung baitang ng Notre Dame of Jolo High School – Kasulutan ayon sa positibong pamamaraan, negatibong pamamaraan, pamamaraan ng pagtuturo, at kahalagahan ng pagtuturo. Lahat ng estado ng pagtuturo ay may limang pahayag at may apat na lebel na pagpipilian mula “lubos na sumasang – ayon” hanggang “lubos na hindi sumasang – ayon. Frequency at percentage ang ginamit na paglalapat ng datos para sa unang katanungan. Mean at standard deviation naman para sa ikalawang katanungan. t – test para sa kasarian at ANOVA para sa ikatlong katanungan. Natuklasan na mas marami ang lalaki sa bilang ng mga respondante, nasa pagitan ng 14 – 16 taong gulang, at halos pareho ang bilang sa bawat seksyon bilang respondante. Ang mga respondante

ay sumasang – ayon sa positibong pagtuturo at pamamaraan ng pagtuturo. Ngunit sila ay lubos na sumasang – ayon sa kahalagahan ng pagtuturo at hindi tiyak sa negatibong pagtuturo. Walang mahalagang kinalaman ang kasarian, edad, at seksyon sa estado ng pagtuturo ng asignaturang Filipino sa mga mag – aaral ng ika – sampung baitang ng Notre Dame of Jolo High School – Kasulutan. May mataas na kaugnayan sa estado ng pagtuturo ng asignaturang Filipino ang positibong pagtuturo, negatibong pagtuturo, paraan ng pagtuturo, at kahalagahan ng pagtuturo.

Keywords: *Filipino, Positibong pamamaraan, Negatibong pamaranan, Pamaraan ng pagtuturo, Kahalagahan ng pagtuturo*

INTRODUCTION

Ang pagtaas ng antas ng kaalaman at kasanayan ng guro ay isang mahalagang layunin. Ang paggamit nito ay magiging mas epektibo kung ang guro ay may sapat na kaalaman, malikhaing kakayahan, at may kadalubhasaan sa pagtuturo ng isang paksa. Sa isang panahon kung saan ang ibang mga mag-aaral ay hindi gaanong nabibigyan ng halaga sa asignaturang Filipino, mahalaga para sa isang guro sa Filipino na tiyaking kaya niyang magbigay-buhay at inspirasyon sa mga mag-aaral na mahalin at tangkilikin ang asignaturang Filipino. Upang makamit ang mga layunin ng kurikulum sa Filipino, ang kanyang kadalubhasaan sa paksang ito ay makatutulong nang malaki sa mga mag-aaral na bumuo ng (1) mga kasanayan sa komunikasyon, (2) mga kasanayan sa pag-iisip na replektibo o mapanuring, at (3) ang pagpapahalaga sa panitikan ng mga mag-aaral sa pamamagitan ng paggamit ng teknolohiya at pagbabasa tungo sa pagkakaroon ng pambansang pagkakakilanlan, kultural na literasi, at patulo

Ang Filipino ay ang wikang pambansa ng Pilipinas, ayon sa artikulo XIV ng Konstitusyon ng Pilipinas, seksyon 6. Ang mga wika na ginagamit sa Pilipinas at iba pang mga wika ay dapat patuloy na pagyamanin at pagyamanin habang nililinang ito. Kaya, dapat gamitin ang Filipino bilang pangunahing wika ng pagtuturo sa lahat ng paaralan. Sa pamamagitan ng pagtuturo ng Filipino sa klase, mapauunlad at mapabuti ang paggamit ng wika. Sa kabila nito, maraming mag-aaral ang hindi mahusay sa paggamit ng Filipino. Sa katunayan, maraming mag-aaral ang naniniwala na ang asignaturang Filipino ay may sapat na mga sagot. Ang Ingles ang ginagamit sa komunikasyon at pag-aaral sa silid-aralan kumpara sa Filipino.

Ang pagtuturo ng Filipino ay nagbibigay-daan sa mga mag-aaral na mapabuti ang kanilang pag-iisip at mapabuti ang iba't ibang kasanayan, lalong-lalo na ang pagpapalawak ng kanilang mga kasanayan sa komunikasyon. Ang isang guro ay dapat na may kadalubhasaan sa iba't ibang paraan ng pagtuturo at pagkatuto ng Filipino.

Ginawa ni Nina Baaco et al. (2012) na ang paggamit ng wikang Filipino sa pakikipag-usap ay nagdudulot ng kasiyahan sa bawat isa dahil natutugunan nito ang mga pangangailangan ng bawat isa bilang resulta ng pagkakaunawaan.

Kaugnay nito, sinabi ni Badayos (2000) na ang matagumpay na pagtuturo at pagkatuto ng wika ay malaking responsibilidad ng mga guro. Dahil sa napakalaking responsibilidad na ito, ang guro ay nararapat na magkaroon ng natatanging katangian at mag-angkin ng maraming kakayahan. Sa isang pag-aaral ni Clemente-Reyes (na binanggit ni Fernandez et al., 2013), ang isang epektibong guro ay dapat maging may kaalaman sa lahat ng aspeto ng pagtuturo, kabilang ang pagtuturo, dayagnostiks, paksang-aralin, at pamamahala ng klasrum.

Ang mga bagay na nabanggit ay nag-udyok sa mananaliksik na magsagawa ng pagsisiyasat tungkol sa estado ng pagtuturo ng asignaturang Filipino sa mga mag-aaral sa ika-sampung baitang ng Notre Dame High School sa Jolo, Kasulutan. Ang layunin nito ay matukoy ang estado ng pagtuturo ng Filipino at ang porsyento ng mga mag-aaral na mahusay sa paksa.

Research Questions

Sinuri ng pag-aaral na ito ang estado ng pagtuturo ng asignaturang Filipino sa mga mag-aaral sa ika-sampung baitang ng Notre Dame of Jolo high school – Kasulutan.

Hinangad ng pag-aaral na ito na matugunan ang mga sumusunod na katanungan:

1. Ano Ang Sosyo-demograpikong propayl ng mga respondante ayon sa mga sumusunod:
    1.1. Kasarian;
    1.2. Edad; at
    1.3. Seksyon

2. Ano ang estado ng pagtuturo ng asignaturang Filipino sa mga mag-aaral sa ika-sampung baitang ng Notre Dame of Jolo high school – Kasulutan ayon sa:
    2.1. Positibong pamamaraan;
    2.2. Negatibong pamaranan;
    2.3. Pamaraan ng pagtuturo; at
    2.4. Kahalagahan ng pagtuturo

3. Ano ang kinalaman ng demograpikong propayl sa estado ng pagtuturo ng asignaturang Filipino sa mga mag-aaral sa ika-sampung baitang ng Notre Dame of Jolo High School – Kasulutan?

4. May mahalaga bang pag – uugnay sa mga subkategoryang maisalikom sa estado ng pagtuturo ng asignaturang Filipino sa mga mag – aaral ng ika – sampung baitang ng Notre Dame of Jolo High School – Kasulutan?

METHODOLOGY

Research Design

Ang ginamit na disenyo sa pananaliksik na ito ay deskriptibong kuwantitatibo na disenyo upang malaman o mailarawan ang kasanayan ng mga piling mag-aaral ng ika-sampung baitang ng Notre Dame of Jolo High School-Kasulutan sa estado ng pagtuturo ng asignaturang Filipino. Magbibigay ang mananaliksik ng kwestyunaryo o katanungan sa mga respondante para masagot ang mga layunin ng pag-aaral na ito.

Research Locale

Ang pag-aaral na ito ay isinagawa sa Notre Dame of Jolo high School-Kasulutan taong 2023-2024 na may kabuuan na 1,221 na mag-aaral. Ang paaralang ito ay may 24 seksyon,7 seksyon para sa baitang pito, pito na seksyon para baitang walo, anim na seksyon naman para sa baitang siyam at anim na seksyon ang baitang sampo, may kabuuan na mga guro 36 na mga guro, Isang school registrar, isang head teacher at isang punong-guro. Ang mga guro na ito ay duman sa ibat-ibang palihan o training ayon sa kanilang kakayahan sa tinuturuang asignatura.

Respondents of the study

Ang respondante ng pag-aaral na ito ay 125 na mag-aaral na mula sa ibat - ibang seksyon ng ika-sampung baitang ng Notre Dame of Jolo High School - Kasulutan sa taong panuruan 2023-2024. Subalit 120 respondante lamang ang nirekomenda ng mga panel na kunin bilang respondante ng pag – aaral.

Mga Respondante	Bilang
Futuristic	20
Frugality	20
Fortitude	20
Flexibility	20
Flamboyant	20
Fidelity	20
Kabuuan	**120**

Sampling Procedure

Sa limang seksyon ng ika-sampung baitang ng Notre Dame of Jolo High School- Kasulutan ang mananaliksik ay bumunot sa bawat seksyon ng dalawampung mag-aaral bilang respondante.

Research Instruments

Para makamtam ang layunin ng pag-aaral na ito, ang kwestyunaryo o katanungan ay hinati sa dalawang bahagi, unang ay para sa pansariling impormasyon ng respondante, kasarian, edad, baitang at seksyon, ikalawang bahagi ay ang pagsusuri sa kasanayan ng mga ika - sampung baitang sa epekto ng asignaturang Filipino sa dalawang bahagi na ito ay tseklist.

Data Gathering Procedure

Ang pahintulot sa pagsasagawa ng pag-aaral na ito ay hiniling ng mananaliksik sa principal ng Notre Dame of Jolo High School- Kasulutan, kung ang kahilingan ay aprubado na, isinagawa na ng mananaliksik ang pag-aaral sa nasabing lokasyon na kung saan ang mga piling mag-aaral sa ika-sampung baitang ay tutugun sa tseklist.

Statistical Treatment of Data

Sa pagkuha ng resulta, ang mananaliksik ay gumamit ng statistical tools sa nakalap na datos. Matutulungan ang mananaliksik sa pagkuha ng makabuluhang resulta sa pamamagitan ng paggamit ng statistical analyses. Para sa unang suliranin, frequency at percentage ang ginamit. Para sa ikalawang suliranin ginamit ang weighted mean at standard deviation. Para sa ikatlong suliranin t-test para sa kasarian at one - way ANOVA para sa edad at seksyon ang ginamit. Pearson Product – Moment Correlation naman ang ginamit para sa ika – apat na suliranin.

RESULTS AND DISCUSSION

1. Ano ang demograpikong propayl ng mga respondante ayon sa mga sumusunod: 1.1 kasarian, 1.2 edad, at 1.3 seksyon?

Ang talaan 1.1 ay tungkol sa demograpikong propayl ng mga mag – aaral sa ika – sampung baiting ng Notre Dame of Jolo High School – Kasulutan ayon sa kasarian.

Makikita sa talaan na 68 o 56.7% ng mga respondante ay babae at 52 o 43.3 % ay mga lalaki. Nagpapahiwatig ito na mas nakakarami ang respondanteng babae kesa sa lalaki.

Talaan 1.1 Demograpikong Propayl ayon sa Kasarian

Kasarian	Frequency	Porsyento
Lalaki	52	43.3%
Babae	68	56.7%
KABUUAN	120	100%

Ang talaan 1.2 ay tungkol sa demograpikong propayl ng mga mag – aaral sa ika sampung baitang ng Notre Dame of Jolo High School – Kasulutan ayon sa edad. Makikita sa talaan na 62 o 51.7% ng mga respondante ay nasa pagitan ng mga edad na 16 – 17 taong gulang at 58 o 48.3% naman ay nasa pagitan ng 14 – 15 taong gulang. Ang resulta ay nagpapahiwatig na karamihan sa mga mag – aaral ng ika – sampung baitang ng Notre Dame of Jolo High School – Kasulutan ay nasa kasibulan.

Talaan 1.2 Demograpikong Propayl ayon sa Edad

Edad	Frequency	Porsyento
14 – 15 taong gulang	58	48.3%
16 – 17 taong gulang	62	51.7%
KABUUAN	120	100%

Ang talaan 1.3 ay tungkol sa demograpikong propayl ng mga mag – aaral ayon sa seksyon Makikita sa talaan na ang kinuhang respondante ng mananaliksik ay pare – pareho ang bilang na nasa 20 o 16.7% sa bawat seksyon.

Ang resulta ay nagpapahiwatig na sinadya ng mananaliksik na ibalanse ang dami ng mga respondante sa bawat seksyon.

Talaan 1.3 Demograpikong Propayl ayon sa Seksyon

Seksyon	Frequency	Porsyento
Futuristic	20	16.7%
Frugality	20	16.7%
Fortitude	20	16.7%
Flexibility	20	16.7%
Flamboyant	20	16.7%
Fidelity	20	16.7%
KABUUAN	120	100%

2. Ano ang estado ng pagtuturo ng asignaturang Filipino sa mga mag – aaral ng ika sampung baitang ng Notre Dame of Jolo High School – Kasulutan ayon sa; positibong pagtuturo, negatibong pagtuturo, paraan ng pagtuturo, at kahalagahan ng pagtuturo? Ipinapakita sa talaan 2.1 hanggang 2.4 ang estado ng pagtuturo ng asignaturang Filipino sa mga mag – aaral ng ika – sampung baitang ng Notre Dame of Jolo High School – Kasulutan ayon sa; positibong pagtuturo, negatibong pagtuturo, paraan ng pagtuturo, at kahalagahan ng pagtuturo.

Ang talaan 2.1 ay tungkol sa estado ng pagtuturo ng asignaturang Filipino sa mga mag -aaral ng ika – sampung baitang ng Notre Dame of Jolo High School – Kasulutan ayon sa; positibong pagtuturo.

Makikita na sumasang – ayon ang mga respondante sa lahat ng pahayag ukol sa estado ng pagtuturo ng asignaturang Filipino ayon sa positibong pamamaraan. Ilan sa mga pahayag na ito ay; mayroong positibong epekto ang asignaturang Filipino sa mga mag-aaral (mean = 4.440, SD = .701); at mayroong aktibong partisipasyon sa Filipino ang mag-aaral (mean = 4.040, SD = .840). Ang kabuuan na 4.054 ay nagpapatunay na *sumasang –ayon* ang mga respondante sa mga pahayag tungkol sa pagtuturo ng asignaturang Filipino ayon sa positibong pamamaraan.

Ito ay nagpapahiwatig na ang positibong pagtuturo ng asignaturang Filipino ay nakakahikayat sa mga mag – aaral upang pagbutihin ang kanilang pag – aaral sa nasabing asignatura.

Talaan 2.1 Estado ng Pagtuturo ng Asignaturang Filipino ayon sa Positibong Pagtuturo

Positibong Pagtuturo	Mean	SD	Interpretasyon
1. Mayroong positibong epekto ang asignaturang Filipino sa mga mag-aaral.	4.440	.701	Sumasang – ayon
2. Mayroong aktibong partisipasyon sa Filipino ang mag-aaral.	4.040	.840	Sumasang – ayon
3. Nagiging mabilis ang pagkatuto sa Filipino ng mag-aaral.	3.920	.837	Sumasang – ayon
4. Mas mauunawaan ng mga mag-aaral ang mga aralin.	3.740	1.008	Sumasang – ayon
5. Nagkakaroon ng panibago at malawak na kaalaman ang mga mag-aaral sa Filipino.	4.130	1.253	Sumasang – ayon
KABUUAN	4.054		SUMASANG – AYON

LEYENDA: 5 - Lubos na Sumasang-ayon 4- Sumasang-ayon 3- Hindi Tiyak
2- Hindi Sumasang-ayon 1- Lubos na Hindi Sumasang-ayon

Ang talaan 2.2 ay tungkol sa estado ng pagtuturo ng asignaturang Filipino sa mga mag-aaral ng ika – sampung baitang ng Notre Dame of Jolo High School – Kasulutan ayon sa; negatibong pagtuturo.

Makikita sa resulta ng talaan na nagpahayag ang mga respondante ng *hindi sumasang-ayon* o di kaya ay *hindi tiyak* sa iba't – ibang mga pahayag. Sila ay *hindi tiyak* na mayroong mga negatibong epekto ang asignaturang Filipino sa mga mag-aaral (mean = 2.940, SD = 1.278). Sila ay *hindi sumasang – ayon* na nahihirapang matuto ang mga mag-aaral sa Filipino (mean = 2.370, SD = 1.568). Ang kabuuan na 2.620 ay nagpapatunay na *hindi tiyak* ang mga respondante tungkol sa estado ng pagtuturo ng asignaturang Filipino ayon sa negatibong pamamaraan.

Ang resulta ay patunay na hindi nakakatiyak ang mga respondante sa masamang idudulot ng negatibong pagtuturo ng asignaturang Filipino sa kanilang pag – aaral.

Ayon kay Badayos (2000), malaki ang pananagutan ng mga guro sa isang matagumpay na pagtuturo at pagkatuto ng wika. Dahil sa malaking pananagutang ito, ang guro ay nararapat na magtaglay ng mabubuting katangian at mag-angkin ng napakaraming kakayahan. Kaya't ang negatibong pagtuturo ay walang puwang na makakatulong sa mga mag – aaral ng asignaturang Filipino.

Talaan 2.2 Estado ng Pagtuturo ng Asignaturang Filipino ayon sa Negatibong Pagtuturo

Negatibong Pagtuturo	Mean	SD	Interpretasyon
1. Mayroong mga negatibong epekto ang asignaturang Filipino sa mga mag-aaral.	2.940	1.278	Hindi Tiyak
2. Mababa ang lebel ng interes ng mga mag-aaral sa Filipino.	2.590	1.457	Hindi Tiyak
3. Madaling mabagot ang mga mag-aaral sa asignaturang Filipino.	2.760	1.173	Hindi Tiyak
4. Nahihirapang matuto ang mga mag-aaral sa Filipino.	2.370	1.568	Hindi Sumasang – ayon
5. Nahihirapang makaunawa ang mga mag-aaral	2.440	1.184	Hindi Sumasang – ayon

sa Filipino.

KABUUAN	2.620	HINDI TIYAK

Ang talaan 2.3 ay tungkol sa estado ng pagtuturo ng asignaturang Filipino sa mga mag –aaral ng ika – sampung baitang ng Notre Dame of Jolo High School – Kasulutan ayon; sa paraan ng pagtuturo.

Makikita sa talaan na ang mga respondante ay *lubos na sumasang – ayon* o di kaya ay *sumasang – ayon* sa iba't – ibang pahayag ukol sa paraan ng pagtuturo ng asignaturang Filipino. Sila ay *lubos na sumasang – ayon* na mayroong estratehiyang nagkakaroon ng talakayan ang isang grupo sa harap ng mag-aaral (mean = 5.000, SD = .000). Sila ay *sumasang – ayon* namayroong angkop na gamit sa pagtuturo ang asignaturang Filipino sa mag-aaral (mean = 4.120, SD = .891). Ang kabuuan na 4.363 ay nagpapatunay na ang mga respondante ay *sumasang – ayon* sa estado ng pagtuturo ng asignaturang Fiipino ayon sa paraan ng pagtuturo.

Ang resulta ay nagpapatunay na may iba't – ibang paraan ng pagtuturo ng asignaturang Filipino na nakakatulong upang magpursigi ang mga mag – aaral na matutunan ito.

Talaan 2.3 Estado ng Pagtuturo ng Asignaturang Filipino ayon sa Paraan ng Pagtuturo

Paraan ng Pagtuturo	Mean	SD	Interpretasyon
1. Mayroon itong angkop gamitin sa pagtuturo kaugnay ng pagbubuo ng tuntunin o pagkakaroon ng isang paglalahat o generalization sa mag-aaral.	4.130	.837	Sumasang – ayon
2. Mayroong angkop na gamit sa pagtuturo ang asignaturang Filipino sa mag-aaral.	4.120	.891	Sumasang – ayon
3. May pamamaraan ng pagtuturo upang mahikayat ang mag-aaral sa pamamagitan ng malinaw at paglalahad ng pangangatuwiran.	4.510	.628	Lubos na Sumasang – ayon
4. May integrasyon o pagsasanib ng mga kasanayang sa Filipino. (Skill- based integration) sa mga-aaral.	4.060	.736	Sumasang – ayon
5. Mayroong estratehiyang nagkakaroon ng talakayan ang isang grupo sa harap ng mag-aaral.	5.000	.000	Lubos na Sumasang – ayon

KABUUAN	4.364	SUMASANG - AYON

Ang talaan 2.4 ay tungkol sa estado ng pagtuturo ng asignaturang Filipino sa mga mag –aaral ng ika – sampung baitang ng Notre Dame of Jolo High School – Kasulutan ayon sa; kahalagahan ng pagtuturo.

Makikita sa resulta na ang mga respondane ay *lubos na sumasang – ayon* sa lahat ng pahayag tungkol sa kahalagahan ng pagtuturo ng asignaturang Filipino. Ilan sa mga pahayag na ito ay; upang malinang ang kaalaman sa asignaturang Filipino ng mga mag-aaral (mean = 5.000, SD = .000); at para mapalawak ang kalaaman ng mag-aaral sa wika at panitikan ng asignaturang Filipino (mean = 5.000, SD = .000). Ang kabuuan na 5.000 ay nagpapatunay na *lubos na sumasang – ayon* ang mga respondante sa kahalagahan ng pagtuturo ng asignaturang Filipino.

Ang resulta ay nagpapahiwatig na ang mga respondante ay nskikita na mahalaga ang pagtuturo ng asignaturang Filipino.

Talaan 2.4 Estado ng Pagtuturo ng Asignaturang Filipino ayon sa Kahalagahan ng Pagtuturo

Kahalagahan ng Pagtuturo	Mean	SD	Interpretasyon
1. Upang malinang ang kaalaman sa asignaturang Filipino ng mga mag-aaral.	5.000	.000	Lubos na Sumasang – ayon
2. Para mapalawak ang kalaaman ng mag-aaral sa wika at panitikan ng asignaturang Filipino.	5.000	.000	Lubos na Sumasang – ayon
3. Para mapahalagahan ang pagtuturo ng asignaturang Filipino ay kailangan masigla ang talakayan sa mga mag-aaral.	5.000	5.000	Lubos na Sumasang – ayon
4. Mahalaga ang pagtuturo sa mg mag-aaral sa asignaturang Filipino dahil ito ay ginagamit na midyum ng mga guro sa pagtuturo.	5.000	.000	Lubos na Sumasang – ayon
5. Mahalaga ang asignaturang Filipino sapagkat hinuhubog ang isip ng mag-aaral.	4.990	.100	Lubos na Sumasang – ayon
KABUUAN	5.000		LUBOS NA SUMASANG - AYON

3. Ano ang kinalaman ng demograpikong propayl sa estado ng pagtuturo ng asignaturang Filipino sa mga mag – aaral sa ika – sampung baiting ng Notre Dame of Jolo High Schol – Kasulutan?

Ang talaan 3.1 at 3.2 ay tungkol sa kinalaman ng demograpikong propayl sa estado ng pagtuturo ng asignaturang Filipino sa mga mag – aaral sa ika – sampung baitang ng Notre Dame of Jolo High Schol – Kasulutan.

Ang talaan 3.1 ay gumamit ng t – test para sa kinalaman ng estado ng pagtuturo ng asignaturang Filipino sa mga mag – aaral sa pamamagitan ng kasarian.

Ang sig. value na 0.115 para sa positibong pagtuturo ay mas malaki kesa sa p = value na .05, Ang sig. value na 0.238 para sa negatibong pagtuturo ay mas Malaki kesa sa p – value na .05, ang sig. value na 0.457 para sa paraan ng pagtuturo ay mas Malaki sa p = value na .05, at ang sig. value na 0.440 para sa kahalagahan ng pagtuturo ay mas Malaki din kesa p = value na .05. Ibig sabihin ay walang mahalagang kinalaman ang kasarian sa estado ng pagtuturo sa asignaturang Filipino.

Ang resulta ay nagpapakita na hindi basehan ang kasarian upang makapagturo ng mabuti sa asignaturang Filipino.

Talaan 3.1 t – test Para sa Kinalaman ng Estado ng Pagtuturo ng Asignaturang Filipino sa Pamamagitan ng Kasarian

Variables	Grouping	Mean	SD	Mean Diff.	t	Sig.	Description
Positibong Pamamaraan	Lalaki	5.850	1.120	0.180	31.852	.115	Walang Kinalaman
	Babae	5.670	1.230				
Negatibong Pamamaraan	Lalaki	4.940	1.050	0.220	30.950	.238	Walang Kinalaman
	Babae	4.720	1.230				
Paraan ng Pagtuturo	Lalaki	5.650	1.430	0.330	30.410	.457	Walang Kinalaman
	Babae	5.320	1.250				
Kahalagahan ng Pagtuturo	Lalaki	4.680	1.450	0.350	31.320	.440	Walang Kinalaman
	Babae	4.330	1.240				

Significant at .05 level

Talaan 3.2 Analysis of Variance (ANOVA) ang ginamit para sa edad at seksyon.

Ang sig. value na 0.070 para sa edad ay mas mataas kesa sa p – value na .05 at ang sig. value na 0.516 para sa seksyon ay mas mataas kesa sa p – value na .05.

Ang ibig sabihin ay tinatanggap ang negatibong haypotesis pamamagitan ng edad at seksyon. Ang resulta ay nagpapahiwatig na hindi makikita ang mahalagang kinalaman ng edad at seksyon sa estado ng pagtuturo ng asignaturang Filipino.

Talaan 3.2 ANOVA Para sa Mahalagang Kinalaman ng Demograpikong Propayl sa Estado ng Pagtuturo ng Asignaturang Filipino sa mga Mag – aaral ng Ika – sampung Baitang ng Notre Dame of Jolo High School – Kasulutan ayon sa Edad at Seksyon

		Sum of Square	df	Mean Square	f	Sig. Deskripsyon
Edad						
	Between Groups	2.297	1	2.297	5.845	.070
	Within Groups	46.343	118	.393		Walang
	Total	48.640	119			Kinalaman
Seksyon						
	Between Groups	1.623	4	.406	.993	.516
	Within Groups	47.017	115	.409		Walang
	Total	48.640	119			Kinalaman

4. May mahalaga bang pag – uugnay sa mga subkategoryang maisalikom sa estado ng pagtuturo ng asignaturang Filipino sa mga mag – aaral ng ika – sampung baitang ng Notre Dame of Jolo High School – Kasulutan?

Ipinapakita sa Talaan 4 ang mahalagang pag – uugnay sa mga subkategoryang maisalikom sa estado ng pagtuturo ng asignaturang Filipino sa mga mag – aaral ng ika – sampung baitang ng Notre Dame of Jolo High School – Kasulutan ayon sa; positibong pagtuturo, negatibong pagtuturo, paraan ng pagtuturo, at kahalagahan ng pagtuturo.

Ang kabuuan ng r = 0.562 para sa positibong pagtuturo ay nagpapahiwatig ng mataas na kaugnayan, ang kabuuan ng r = 0.574 para sa negatibong pagtuturo ay nagpapahiwatig ng mataas na kaugnayan, ang kabuuan ng r = 0.646 ay nagpapahiwatig ng mataas na kaugnayan, at ang kabuuan ng r = 0.594 ay nagpapahiwatig din ng mataas na kaugnayan.

Ang resulta ay nagpapahiwatig na ang iba't – ibang estado ng pagtuturo ng asignaturang Filipino ay hindi pwedeng ilayo sa isa't – isa. Sila ay may mahalagang kaugnayan sa pagkatuto ng mga mag – aaral sa Filipino.

Talaan 4. Mahalagang pag – uugnay ng mga subkategoryang maisalikom sa estado ng pagtuturo ng asignaturang Filipino sa mga mag – aaral ng ika – sampung baitang ng Notre Dame of Jolo High School – Kasulutan ayon sa; positibong pagtuturo, negatibong pagtuturo, paraan ng pagtuturo, at kahalagahan ng pagtuturo

		Pearson r	Sig.	n	Description
Positibong Pagtuturo	Negatibong Pagtuturo	.585	.000	120	Mataas
	Paraan ng Pagtuturo	.621	.000	120	Mataas
	Kahalagahan ng Pagtuturo	.479	.000	120	Katamtaman
	Kabuuan	.562			MATAS
Negatibong Pagtuturo	Positibong Paguturo	.648	.000	120	Mataas
	Paraan ng Pagtuturo	.525	.000	120	Mataas
	Kahalagahan ng Pagtuturo	.548	.000	120	Mataas
	Kabuuan	.574			MATAAS
Paraan ng Pagtuturo	Positibong Pagtuturo	.681	.000	120	Mataas
	Negatibong Pagtuturo	.573	.000	120	Mataas
	Kahalagahan ng Pagtuturo	.685	.000	120	Mataas
	Kabuuan	.646			MATAAS

Kahalaghan ng Pagtuturo	Positibong Pagtuturo	.450	.000	120	Katamtaman
	Negatibong Pagtuturo	.629	.000	120	Mataas
	Paraan ng Pagtuturo	.702	.000	120	Napakataas
	Kabuuan	.594			MATAAS

*Correlation Coefficient is significant at £ = .05
Correlation Scales adapted from Hopkins (2002):
– 0.1 = Nearly Zero (halos wala); 0.1 – 0.3 = Low (mababa);
0.3 – 0.5 = Moderate (katamtaman); 0.5 – 0.7 = High (mataas);
0.7 – 0.9 = Very High (napakataas); 0.9 – 1.0 = Nearly Perfect (halos perpekto)

Conclusions

Ang mga konklusyon ay base sa natuklasan ng pananaliksik:

Mas marami talaga ang mga lalaki kesa sa mga babae na nag – aaral sa Notre Dame of Jolo High School – Kasulutan. Ito marahil ay dahil sa dati itong eksklusibong paaralan para sa mga lalaki.

Inaasahan na talaga na mas mahalaga pa rin ang pagtuturo ng asignaturang Filipino dahil ito ay simbolo ng ating kasarinlan at pagkakakilanlan bilang mga Pilipino.

Anupaman ang iyong kasarian, edad, at seksyon, mahalaga pa rin ang matuto ka bilang mag aaral ng sarili mong wika. Sa parte naman ng mga guro, dapat nilang gawing mas kawili – wili ang pagtuturo ng asignaturang Filipino upang ang mga – aaral ay maengganyong matutunan ito ng mabuti.

Ang resulta ay nagpapahiwatig na ang iba't – ibang estado ng pagtuturo ng asignaturang Filipino ay hindi pwedeng ilayo sa isa't – isa. Sila ay may mahalagang kaugnayan sa pagkatuto ng mga mag – aaral sa Filipino.

Recommendations

Ang mga sumusunod ay inirerekomenda base sa resulta ng pananaliksik:

1. Dapat suportahan ng administrasyon ng paaralan ang lahat ng aktibidades ng guro at mag – aaral sa asignaturang Filipino.

2. Para sa mananaliksik sa hinaharap, dapat niyang suriin ang mga baryabol na hindi kasali sa pananaliksik na ito.

3. Dapat mas linangin ng mga guro ang kaalaman ng mga mag – aaral sa asignaturang Filipino upang mas lalo nilang maipagmalaki ito sa ibang lahi.

4. Dapat positibo lamang ang paraan ng pagtuturo ng asignaturang Filipino at bigyang diin kung bakit dapat nilang pag – aralan ang asignatura na ito.

5. Dapat magpursigi ang mga mag – aaral na matutunan ang dapat nilang matutunan sa asignaturang Filipino upang hindi maging banyaga sa sarili nilang wika.

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Compliance with Ethical Standards

Sinigurado ng mananaliksik na naayon sa maayos na paraan at nakabatay sa maayos na alituntunin ang pagsagawa ng pag-aaral.

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ETHNOBOTANICAL INVENTORY OF TRADITIONAL PLANT OF THE SUBANEN TRIBAL COMMUNITIES IN ZAMBOANGA SIBUGAY, MINDANAO

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ABSTRACT

The study aimed to document ethnobotanical and phytocultural importance of traditional plants by the *Subanen* tribal communities in the province of Zamboanga Sibugay, Mindanao. The study utilized descriptive research design to gathered information from general interviews and focus group discussions designed to learn more about how participants use a few different plants utilized for food and medicine. More so, cultural practices and beliefs related to utilization of traditional plants by the *Subanen* tribal communities. The results showed that there was a total of 26 traditional plant species having medicinal values which they use to treat various range of diseases and seven (7) plant species utilized both as food and medicine. There were 33 species of plants documented are under 24 families and are mostly represented by herbs. Three plant species each were under Family Asteraceae and Malvaceae, respectively. Consequently, the phytochemical screening of the ethanolic extracts of cobra vine seeds revealed the presence of flavonoids, alkaloids, polyphenols and tannins. Since phytochemicals are nonnutritive substances in plants that possess health protective benefits, it can be inferred that cobra vine seeds possess medicinal and nutraceutical potential. Likewise, cobra vine can be investigated to create an evidence base that will facilitate their inclusion in medical practice and as food supplement and additives in the food industry.

Keywords: *ethnobotanical inventory, subanen tribal communities, traditional plant*

INTRODUCTION

From ancient time various plant species have been used by human being as a source of food, shelter, medicine, fiber, gum, resin, oil, etc. Several wild plants are used as food by tribes and other local communities living in that particular region. It has been observed that the traditional knowledge on indigenous plants is declining day by day (Mishra et al., 2012).

Natural resources are of great importance to rural communities since they provide many useful materials for their daily life. One of these important resources is the indigenous plants which provide food, and wood for fuel and building materials.

The Philippines is endowed with diverse flora and fauna. It is home to many endemic species as well as indigenous tribes with assorted cultural practices. These various indigenous tribes are dependent on their environment. The forests and mountains serve as a life-support system because these provide basic needs such as food, clothing, shelter, medicine, and other ecological services. With the intimate dependence of indigenous communities on natural resources, traditional knowledge on the use of these resources has evolved through time and has become knitted into their cultural practices.

Indigenous tribes in the Philippines exhibit a wealth of traditional knowledge on the use of their natural resources, yet documents and published materials on ethnobotanical studies are scarce. Few earlier publications were focused on more popular ethnic tribes.

The remarkable work of Reed (1904) on the Negritos of Zambales described the origin, distribution, diasporas, culture and traditions, including descriptions of the industrial life of the group like hunting, fishing, agriculture, manufacture, and trade. Social life of the Negrito such as marriage, polygamy, divorce, burial, morals, slavery, music, dances, games, and clothing were also presented. In 1952, Fox demonstrated the useful plants and material culture of the same tribe. In another study, Rocero (1982) documented the ethnobotanical knowledge of the Itawes, a minority group of Cagayan Valley. Interestingly, the Itawes' use of plant resources was classified according to food, beverage, building and construction materials, furniture and other household equipment, medicinal plants, and other purposes.

In the Cordillera region, the only available document on how the eastern Ifugaos use their plant resources was a study by Beyer and Merrill between 1905 and 1965 which was summarized by Conklin (1967). For the Kalanguya, a sub-tribe of the Ifugao tribe, the only known records are those by Rice (1984) and Natalio (1987) who presented an

assessment of the development project introduced to the Kalanguya or Ikalahan in Nueva Vizcaya. Among the numerous tribes in the Cordillera region, the Kalanguya of Tinoc, who live in the western part of Ifugao province, exhibits a cultural heritage that is unique and rich. They live a very interesting way of life yet this indigenous group is hardly known because of the scarcity of published materials about their cultural practices and ethno-botanical knowledge. The only available document of this sub-tribe is an unpublished thesis which described the traditional practices of this group and their implication on education (Gaspili 1987).

According to Aquino (2010), the Philippines has been blessed with plants but, more often than not, these have been neglected or remain underutilized. For a long time, little did we know that the parts of these plants have own unique characteristics and uses that can be processed into different forms usable to man. Many of these plants have medicinal properties and are now being exploited for their cosmetic and aesthetic values, for aromatherapy, or even their use as spices, food supplements and functional food. In particular, Region 9 is one of the regions with an abundance of these plants and is where the practice of herbal medicine and the use of medicinal plants are extensive. These botanicals have thrived in the region (Zamboanga del Norte, Zamboanga del Sur, and Zamboanga Sibugay) and are easily available.

It is to this end that this study was conducted among tribal communities in the province of Zamboanga Sibugay, Mindanao to serve as a living document of the use of plant resources, particularly for food and medicinal purposes, of the *Subanen* tribe. This study on the uses of plant resources as food and medicine by the tribal communities if left undocumented can be irretrievably lost. Consequently, this serves as a record of this vanishing yet important indigenous knowledge.

Research Objectives

The main purpose of this study was to document ethnobotanical inventory and phytocultural importance of traditional plants by the *Subanen* tribal communities in the province of Zamboanga Sibugay, Mindanao.

Specifically, this study aimed to:

1. document the existing traditional plant resources of food and medicine of the *Subanen* tribal communities in Zamboanga Sibugay, Mindanao;
2. document the following information on the identified plants:
    - 2.1 Botanical characteristics/description;
    - 2.2 Ethnobotany and related information on the plants' utilization,
    - 2.3 Perceptions of the plants' socio-economic importance, and

2.4 Possible threats to the species and conservation initiatives;

3. determine whether the utilization of plants is tied with the cultural practices and beliefs of the *Subanen* tribal communities; and
5. present the phytochemical composition of one distinctive traditional plant identified.

METHODOLOGY

Research Design

The study utilized descriptive research design. Descriptive research describes data and characteristics about the population or phenomenon being studied. Descriptive research answers the questions who, what, where, when and how. It is a scientific method which involves observing and describing the behavior of a subject without influencing it in any way. The common data collection methods for descriptive research are surveys, interviews, observations and portfolios (Calderon and Gonzales, 1993).

Information were obtained from general interviews and focus group discussions designed to learn more about how participants use a number of different plants utilized for food and medicine.

Population and Sampling

Three tribal communities of the *Subanen* were selected out of the five indigenous groups in the province of Zamboanga Sibugay, Mindanao, namely: Lapuyan tribe, Kalibugan tribe and Binakalan Tribe. The *Subanen* tribe was selected because the group spent a great deal of time in gathering food for their livelihood than other tribes. The *Subanen* also had the largest population of tribal members in Zamboanga Sibugay based on the records of the Philippine National Commission on Indigenous Peoples.

Ten local elders from three *Subanen* tribal communities were the major sources of information in this study. In all, a total of 15 respondents comprising of five local elders from each of the three *Subanen* tribes were interviewed and three traditional healers. The focus group discussions were composed of five elders who participated in the interviews and were conducted on a scheduled visit to the area.

The selection criterion that was used for informants will be the reliability and depth of knowledge each one of them had. In general, the best informants were older men and women who were alive at times when their culture was subjected to fewer inputs from contemporary society.

Research Instrument

A structured interview schedule was developed to gather the respondents' socio-demographic profile and their knowledge and perceptions of IFPs. These included:(a) traditional plant resources used and/ or known; (b) socioeconomic importance and prospects; (c) reasons for usage/non-usage; (d) ethnobotany (how the plant is used in a particular area, i.e. food, medicinal, feed, ritual, industrial, etc.); and (f) conservation efforts on the target plants.

During the interviews, questions were translated to the local dialect and answers translated back to the English language for documentation.

Data Collection

Informed consent and the permission to conduct the study was secured from the local government units (LGUs) in Zamboanga Sibugay Province. Thereafter, permission was secured from the head of tribe of the three *Subanen* tribal communities. Once permission is granted, the researcher scheduled field interviews and focus group discussions (FGDs) with the local elders to gather the necessary data. Plant materials for propagation and taxonomic identification were also collected and observed for botanical description.

The main objective of this study was achieved through scheduled interviews and focus group discussions and was augmented by direct observations. Face-to-face interviews were accomplished using the local dialect because most of the participants only speak this dialect. During the interviews, questions were translated to the local dialect and answers translated back to the English language for documentation. The information that was gathered through face-to-face interviews will be confirmed by field observations and focus group discussions. The group discussions were composed of five respondents and were conducted on visitations to the area.

Along the way to the tribal villages, the researcher collected plant samples and presented to the community for ethnobotanical data. At other times, field visits to the forests or "walk into the woods," a method introduced by Cunningham (2001), were undertaken together with the informants to facilitate identification and demonstrate which plants are used for food purposes. These plants were photographed and were indexed in vouchers.

Voucher Specimen Collection and Management

Available plants were collected from their natural habitat. Passport descriptors and other important notes (i.e., collection number, collector(s), collection site, material collected) were accomplished for each accession. For this study, plant specimens were collected along with necessary information with the help of local elders from the tribal communities. Collected samples were processed and authentically identified consulting the pertinent literatures, and specialists.

Specimens were collected from the natural population and prepared for taxonomic identification. In this study, the common species between and among the three tribes were enumerated. Local names were given followed by the tribal name in parenthesis in abbreviated form. Specimens were identified, photographed and indexed in vouchers. Botanical descriptions of the identified plants were recorded from specimens in situ.

Phytochemical Screening of Cobra vine (*Ipomoea cf. setosa*) Seeds

The ethanolic extracts of cobra vine (*Ipomoea cf. setosa*) seeds were subjected to phytochemical analysis at the UST Research Center for Natural and Applied Sciences (Appendix 4). The phytochemical screening of the seed extracts of cobra vine were determined by standard procedures using the following tests: Bate-Smith and Metcalf method, Munier and Macheboeuf modification test, Ferric chloride test, and Gelatin test.

Data Analysis

A written narrative of interviews and FGDs with the key informants was presented. Key phrases from the interviews and FGDs were written on index cards.

The data collected were analyzed and presented using descriptive statistics. Descriptive statistics such as frequency distribution, percentage, mean and standard deviation were used to answer the objectives of study.

RESULTS AND DISCUSSION

This section discusses and analyzes the data obtained from interviews, FGDs and field observations. This documented the existing traditional plant resources of food and medicine of the selected Subanen tribal communities; the different information on the plants identified such as: botanical characteristics/description, ethnobotany and related information on the plants' utilization, perceptions of the plants' socio-economic

importance, possible threats to the species and conservation initiatives; and the cultural practices and beliefs tied with the utilization of the identified plants.

Existing Traditional Plant Resources of Food and Medicine of the *Subanen* tribal Communities in Zamboanga Sibugay, Mindanao

As shown in Table 1, Subanens from the three tribal communities of Zamboanga Sibugay, Mindanao utilized 33 varieties of plants as food and medicine.

Table 1. List of traditional plant resources utilized as food and medicine by the *Subanen* tribal Communities in Zamboanga Sibugay, Mindanao

FAMILY	LOCAL NAME	COMMON NAME	SCIENTIFIC NAME	USE
Acanthaceae	Kuyanap	Dahon-pula (Filipino); Metal leaf, red ivy (Eng.)	*Hemigraphis colorata* (Bl.) Hallier	Medicine
Acanthaceae	Mandalusa	Limang-sugat, kapanitulot (Filipino); Shooting star (Eng.)	*Justicia gendarussa* Blanco	Medicine
Amaryllidaceae	Abod	Tambal (Filipino); Cardwell lily (Eng.)	*Eurycles amboinensis* (L.) Lindl. ex Loudon	Medicine
Apiaceae	Gotu Kola	Yahong-yahong (Filipino); Marsh pennywort (Eng.)	*Hydrocotyle vulgaris* Linn.	Medicine
Asteraceae	Maluko	Hagonoy (Filipino); Jack in the bus, devil weed, Siam weed (Eng.)	*Chromolaena odorata* (L)	Medicine
Asteraceae	Pisaw-pisaw	Tagulinaw (Filipino); Lilac tasselflower (Engl.)	*Emilia sonchifolia* (Linn.)	Medicine
Asteraceae	Tulay-tulay	Dadayem (Filipino); Beggar ticks (Eng.)	*Bidens pilosa* Linn.	Medicine
Convolvulaceae	Cobra	Cobra vine (Eng)	*Ipomoea cf. setosa*	Medicine
Crassulaceae	Hanlilika	Katakataka (Filipino); Cathedral bells (Eng.)	*Kalanchoe pinnata* (Lam.) Pers.	Medicine
Cyperaceae	Busikad	Anuang (Filipino); Whitehead Spike Sedge (Eng.)	*Cyperus kyllingia* f. *humilis* (Boeckeler)	Medicine
Dracaenaceae	Espada-espada	Espada (Filipino); Spear plant (Eng.)	*Sansevieria spp.*	Medicine
Euphorbiaceae	Balanghoy	Kamoteng kahoy (Filipino); Cassava, tapioca plant (Eng.)	*Manihot esculenta* Crantz	Medicine

Euphorbiaceae	Tuba-tuba	Tubang bakod (Filipino); Purging nut tree (English)	*Jatropha curcas* Linn	Medicine
Fabaceae	Asunting	Akapulko (Filipino); Ringworm bush or shrub (Engl.)	*Cassia alata* Linn.	Medicine
Flagelleriaceae	Uag / Uai	Baling-uai (Filipino); Whip vine (Eng.)	*Flagellaria indica* Linn.	Food and medicine
Gnetaceae	Bago	Bago (Filipino)	*Gnetum gnemon* Linn.	Food and medicine
Lamiaceae	Sangig	Balanoy (Filipino); Sweet basil (English),	*Ocimum basilicum* L.	Medicine
Lamiaceae	Wachichao	Balbaspusa (Filipino); Cat's whiskers (Eng.)	*Orthosiphon aristatus* (Blume) Miq.	Food and Medicine
Leguminosae	Mani-mani	Tayam (Filipino); False ground nut, Asian ticktrefoil, (English); Mani-manian (Tagalog)	*Desmodium heterocarpon* (L.) DC.	Medicine
Liliaceae	Ganda	Kutsay (Filipino); Chinese chives (English)	*Allium tuberosum*	Medicine
Malvaceae	Likway	Lagikway (Filipino); Sunset muskmallow (Eng.)	*Abelmoschus manihot* L. Medikus	Food and medicine
Malvaceae	Eskubang-mayawis	Uaualisan (Filipino); Wireweed (English)	*Sida acuta* Burm. f.	Medicine
Malvaceae	Ahimit / Labog	Labuag (Filipino); Sapinit (Tag.); Wild sour (Eng.)	*Fucaria suratensis* Kostel	Food and medicine
Menispermaceae	Panyawan	Makabuhay (Filipino); Heavenly elixir (Eng.)	*Tinospora rumphii* Boerl. is a synonym of *Tinospora crispa* (L.) Hook. f. & Thomson	Medicine
Moraceae	Lagnob	Hauili (Filipino); Labnog (P. Bis.); Hauili fig tree (Eng.)	*Ficus septica* Blanco *Ficus septica* Burm.f.	Medicine
Moraceae	Kamongsi	Kamansi (Filipino); Breadnut (Eng.)	*Artocarpus camansi* Blanco	Food and medicine
Piperaceae	Sinaw-sinaw	Pansit-pansitan (Filipino); Ulasiman-bato (Tag.); Sinaw-sinaw (Bis.); Shiny bush (Eng.)	*Peperomia pellucida* (L.) Kunth	Medicine
Poaceae	Bila-bila	Paragis (Filipino); wire grass, crowsfoot, goosegrass (Eng.)	*Eleusine indica*	Medicine

Poaceae	Galot	Talahib (Filipino); Wild sugarcane (Eng.)	*Saccharum spontaneum*	Food and medicine
Smilacaceae	Banag	Banag (Filipino, Bis.); Sarsaparilla vine (Engl.)	*Smilax bracteata* Presl.	Medicine
Tiliaceae	Dalupang	Kulutkulutan (Filipino); Chinese burr (Eng.)	*Triumfetta bartramia* Linn.	Medicine
Urticaceae	Alagasi	Alagasi (Filipino); Tooth scrubber (Eng.)	*Leucosyke capitellata* Wedd.	Medicine
Zingiberaceae	Dulaw	Dilaw, luyang-dilaw (Tag.); Turmeric, long tumeric (Eng.);	*Curcuma longa* Linn.	Medicine

A total of 26 plant species were used as medicine and a total of seven (7) plant species were used both as food and medicine by the Subanen tribal communities. These plant species correspond to twenty-four (24) different families such as: Acanthaceae, Amaryllidaceae, Apiaceae, Asteraceae, Convolvulaceae, Crassulaceae, Cyperaceae, Dracaenaceae, Euphorbiaceae, Fabaceae, Flagelleriaceae, Gnetaceae, Lamiaceae, Leguminosae, Liliaceae, Malvaceae, Menispermaceae, Moraceae, Piperaceae, Poaceae, Smilacaceae, Tiliaceae, Urticaceae, and Zingiberaceae.

Some of the plant species identified although they are well known throughout the Philippines, they are not well recognized to treat different ailments such as: *Kalanchoe pinnata, Manihot esculenta* Crantz, *Tinospora rumphii* Boerl., *Eleusine indica, Saccharum spontaneum*. These plants are generally available from forest, fields and roadsides.

Many related research were conducted regarding the effectiveness of the said families. Some of the species under these families were proven to contain various chemical compounds and metabolites that are known to have medicinal properties. Asteraceae family for instance, is one of the largest and most diverse of all plant families. They are also considered edible and safely medicinal, but they often contain very active ingredients along with their exceptional supplies of nutrients. Many Asteraceae contain active alkaloids that are medicinal (Rahman, 2013).

Relevant Information Related to the Identified Plant Resources of Food and Medicine of the *Subanen* tribal Communities in Zamboanga Sibugay, Mindanao

Table 11 summarizes the botanical characteristics, ethnobotany and related information on the plants utilization both as food and medicine by the three *Subanen* tribal Communities in Zamboanga Sibugay, Mindanao. Seven (7) plant species were used both as food and medicine by the Subanen tribal communities, namely: *Flagellaria indica* L.,

Gnetum gnemon L., *Orthosiphon aristatus* (Blume) Miq., *Abelmoschus manihot* L. Medikus, *Fucaria suratensis* Kostel, *Artocarpus camansi* Blanco, and Saccharum spontaneum.

Table 2 Continued.

FAMILY	LOCAL NAME	COMMON NAME	SCIENTIFIC NAME	AS FOOD		AS MEDICINE			
				Plant part(s) used	Method of Food preparation	Medicinal Function	Plant part(s) used	Method of Preparation	Direction for use
Malvaceae	Ahimit / Labog	Labuag (Filipino); Sapinit (Tag.); Wild sour (Eng.)	*Fucaria suratensis* Kostel	Leaves	Leaves served as souring agent and placed on top of pinangat na isda	emollient in enemas	Roots and leaves	Decoction of roots and /or leaves	Drink decoction as needed
Moraceae	Kamongsi	Kamansi (Filipino); Breadnut (Eng.)	*Artocarpus camansi* Blanco	Leaves and fruit	Ripe fruit is eaten raw with sweet and flavorful taste Young fruits are boiled and eaten as a vegetable.	laxative	Fruit	Ripe fruit is eaten as laxative.	Eat fruit as needed
Poaceae	Galot	Talahib (Filipino); wild sugarcane (Eng.)	*Saccharum spontaneum*	Stem	Stems are used as beverage base	kidney condition	Leaves	Decoction: Boil a handful of leaves in 2 glasses of water to produce 1 glass decoction.	Drink 1 glass every morning.

Table 2 Continued.

FAMILY	LOCAL NAME	COMMON NAME	SCIENTIFIC NAME	AS FOOD		AS MEDICINE			
				Plant part(s) used	Method of Food preparation	Medicinal Function	Plant part(s) used	Method of Preparation	Direction for use
Malvaceae	Ahimit / Labog	Labuag {Filipino); Saplnit (Tag.); Wild sour {Eng.)	*Fucana suratensis* Kostel	Leaves	Leaves served as souring agent anel placed on top of pinangat na isda	emoment in enemas	Roots and leaves	Oecoction of roots and /or reaves	Drink decoction as needecl
Moraceae	Kamongs l	Kamansl (Filipino); Breadnut {Eng.)	*Artocarpus camansi* Blanco	Leaves and fruit	Ripe fruit IS eaten raw with sweet and flavorful taste Young fruits are boiled and eaten as a vegetable.	laxative	Fruit	Ripe fruit ls eaten as laxative.	Eat frult as needed
Poaceae	Galot	Talahlb {Filipino); wild sugarcane {Eng.)	*Saccharum spontaneum*	Stem	Stems are used as beverage base	kidney condition	Leaves	Oecoction: Boil a handful of leaves in 2 glasses Of water to produce1 glass decoction.	Drink 1 glass every morning.

The table above shows that majority of the 11 plant species utilized both as food and medicine by the *Subanen* tribal communities commonly used the leaves of the plants as food and medicine. Only the young leafy shoots and stems of *Flagellaria indica* L. and the stems of *Saccharum spontaneum* were utilized by the *Subanens* as food. Likewise, the leaves and fruit of *Artocarpus camansi* Blanco were used by the Subanens as food.

It can also be gleaned from the data that the plant species utilized both as food and medicine came from six (6) different families with only two plant species (*Fucaria suratensis* Kostel, and *Abelmoschus manihot* L. Medikus belonging from the same family Malvaceae. Moreover, decoction was the most common form of medicinal preparation for the six plant species identified. Overall, the results showed that the leaves of the plant species play the role of fresh vegetables in the traditional Subanen diet. It also suggests that there are relatively few plant species utilized by Subanens both as food and medicine.

Table 3 summarizes the botanical characteristics, ethnobotany and related information on the plants utilized as medicine by the three *Subanen* tribal Communities in Zamboanga Sibugay, Mindanao.

The three *Subanen* tribal communities in Zamboanga Sibugay used 26 different plants and plant part/s in treating illnesses. Five (5) plants were used for treating wounds, namely: *Chromolaena odorata* (L); *Sansevieria spp.; Curcuma longa* L.; *Ipomoea nil* for gunshot wounds; and *Jatropha curcas* L. for wounds caused by sharp object. Three (3) plants were used to treat fever /flu, (*Cyperus kyllingia* f. *humilis* (Boeckeler); *Allium tuberosum; and Ficus septica* Blanco), another three (3) plants were used for treating stomachache (*Justicia gendarussa* Blanco; *Desmodium heterocarpon* (L.) DC. for pregnant women; *Sida acuta* Burm. f.), while *Eurycles amboinensis* (L.) Lindl. ex Loudon and *Triumfetta bartramia* L. were used to treat boil / furuncle, while two plants were used to treat kidney trouble or condition (*Hydrocotyle vulgaris* Linn. And *Peperomia pellucida* L.).

The cobra vine (*Ipomoea cf. setosa*) is used by the Subanens to treat poisoning, snakebites, and gunshot wounds. The stems of *Tinospora rumphii* Boerl., locally known as *panyawan* by the Subanens is used for treating eczema.

The most common preparations used by the *Subanen* tribal communities were decoction and poultice. Decoction was usually taken orally and poultice was applied directly to the affected parts. Meanwhile, in order to treat cough, the stems of *Leucosyke capitellata* Wedd., are eaten directly or its trunk was made into decoction.

Table 3. Botanical characteristics and ethnobotany of the plants utilized as medicine by the three Subanen tribal Communities in Zamboanga Sibugay,Mindanao

FAMILY	LOCAL NAME	SCIENTIFIC NAME	MEDICINAL FUNCTION	PLANT PART(S) USED	METHOD OF PREPARATION	DIRECTION FOR USE
Acanthaceae	**Kuyanap**	***Hemigraphis*** colorala *(Bl.)Ha/lier*	inflammation	**leaves**	PouHice:Crush theleaves	Apply the poultice directlyon the **affected area (s)asneeded**
Acanthaceae	Mandalusa	*Justicia* ***gendarussa*** Blanco	**stomachache** I bloating,	Leaves	PouHice: Crash or pound the leaves	Apply the poultice direcUyon the stomach
			fracture,sprain	**Leaves**	PouHice:Pound the leaves and	Apply thepoultice on the affected **area(s)**.
			cold	**Leaves**	Rub crushed leaves on the chest	Rub on the chest 3 times a day
Amaryttidaceae	**Abod**	*Eurycle**s**amboinensis*(L.) Lindi.ex Loudon	boil	**Leaves**	Heat leaves for boil;	Apply the heated leaves on the affected **area(s)**.
			poisoning	Bulb	Oecoction of rootbulb	Drink the decoction and let patient vomit.
Apiaceae	Gotu Kola	*Hydrocoty/e vuJgaris* Linn.	kidney condttion	leaves	Oecoction:Boila handfulof leaves in Sglasses of water to produce 2 glasses of decocUon.	AduH: 1glass 3 times a day
			cough	whole plant	Oecoction of whole plant	Drinkdecoction daily until cough Ishealed
Asteraceae	Maluko	*Chromo/aenaodorata* (L)	wound	leaves	Crush the leaves and apply direclly as poultice on the affecled area.	Apply as needed

Table 3 Continued.

FAMILY	LOCAL NAME	SCIENTIFIC NAME	MEDICINAL FUNCTION	PLANT PART(S) USED	METHODOF PREPARATION	DIRECTION FOR USE
Asteraceae	Pisaw•pisaw	*Emilia sonchifolia* (Linn.)	colds	whole plant	Decoction of wholeplant	Drinkor infuse decoction
Asteraceae	Tulay-lulay	*Bidens pi/osa*Linn.	over fatigue	roots	Decoction of roots	Orink the decoction as needed.
Convolvulaceae	Cobra	*/pomoeacf.setosa*	poisoning, snakebiles, gunshot wounds	Seeds and vines	Seed poultice for poisoning and area. snakebites Vines as express juice	Apply poultice onlhe affected Apply juice on the affected area.
Crassulaceae	Hanlilika	*Kalanchoe pinna/a* (Lam.)Pers.	toothache	leaves	Decoctionof leaves	Drinkdaily until healed
Cyperaceae	Busikad	*Cyperus ky/lingia* f. *humilis* (Boeckeler)	fever/ flu	whole plant	Decoctionof wholeplant	Infuse decoction
Dracaenaceae	Espada-espada	*Sansevieriaspp.*	wound	leaves	Poultice: Cut theleaves into pieces and pound. Apply as poultice on the affected area.	Apply as needed.
Euphorbiaceae	Balanghoy	*Manihot escu/enta* Crantz	furuncle /boil	Rhizome	Scrape the rhizome and apply directly on the affected part.	Apply as needed.
Euphorbiaceae	Tuba-tuba	*Jalropha curcas* Linn	for wound caused by sharp object such as bolo(large cutting tool)	bark	Poultice: expose the bark to fire	Apply directly the grilled bark on the affected part. Secure the bark by tying with clean cloth.

Tiliaceae	Dalupang	*Triumfetta bartramia* Linn.	boil/ furuncle	flowers	Poultice: Crush/pound flowers and apply directly on the affected area	Apply on the affected area(s)		
Urticaceae	Alagasi	*Leucosyke capitellata* Wedd.	cough	Bark and stems	Stems eaten directly and decoction of trunk	Eat small amounts of stem for cough Drink the decoction		
Zingiberaceae	Dulaw	*Curcuma longa* Linn.	wound, ulcer	rhizomes	Poultice: Crush/pound rhizomes and rub on the affected area.	Apply on the affected area(s)		

Other related information on the plants utilized as food and medicine.

Twenty-one of the traditional plant resources utilized as food and medicine by the three Subanen tribal Communities were herbs, six (6) were shrubs, three (3) were vines and only one each was classified as grass [*Cyperus kyllingia* f. *humilis* (Boeckeler)], subshrub [*Chromolaena odorata* (L)], and tree (*Artocarpus camansi* Blanco). The collection sites of these identified plant species were highly varied because many of these plants can be found anywhere since they grow on ordinary soil.

In terms of gathering period, 27 of the plant species were available all year round suggesting that majority of the plants were available to the Subanens any time. Two plant species, ganda (*Allium tuberosum)* and cobra *(Ipomoea cf. setosa)* were gathered quarterly, and another two, bago (*Gnetum gnemon* Linn.) and ahimit / labog (*Fucaria suratensis* Kostel) were harvested between June and July. *Eurycles amboinensis* (L.) Lindl. ex Loudon, locally known as abod was gathered between January and May. While balanghoy (*Manihot esculenta* Crantz) was gathered 8 to 12 months after planting.

Out of the 33 plants identified, 19 were gathered by the Subanens through handpicking, nine (9) plants were harvested by uprooting and two plants were gathered with the use of bolo. The galot plant (*Saccharum spontaneum*) was harvested with the use of sickle while bago (*Gnetum gnemon* Linn.) was gathered with the use of sickle or bolo.

The results indicate that herbs were the primary sources of food and medicine by the three selected Subanen tribal communities. It was also revealed that these plants were highly abundant and can be gathered anytime. The Subanens normally employ handpicking when gathering the plant resources in the fields.

Table 4. Other relatedinformation on the plants utilized as food and medicine by the three Subanen tribal Communities in Zamboanga Sibugay,Mindanao

LOCAL NAME	SCIENTIFIC NAME	GROWTH HABIT	COLLECTION SITE(S)	GATHERING PERIOD	MODE OF GATHERING
Kuyanap	*Hemigraphisco/orata* (Bl.) Hallier	herb	forest overstories, roadsides, yard ornaments	Anytime	handpicking
Manoalusa	*Justiciagendarussa* Blanco	Shrub	thickets,grove	Anytime	use of bolo
Abod	*Euryc/es amboinensis* (L.) Lindi. ex Loudon	herb	along the sides of streams and thickets	From jan -may	handpicking
Gotu Kola	*Hydrocotylevulgarls* Linn.	herb	swamps,marshes	Anytime	handpicking
Maluko	*c1uomo1aena odorata* (L)	subshrub	farm,riverbank	All year rouno	hanopicking
Pisaw-pisaw	*Emilia sonehifolia*(Linn.)	herb	open places, wasteianos, open grassy or waste areas, dry stony areas, roadsicles	Any montl'l	l'lanClpiCking
Tulay-tulay	*Bidenspi/osa*Linn.	herb	grassland, heathland, forest clearings, wetlands, plantations, streamlines, roadsides	Anymonth	handpicking
Cobra	*tpomoea cf. setosa*	vine	thickets on mountain slopes, waysides,fields and hedges	Quarterly	l'lanClplCl<ing
Hanlilika	*Kalanchoe pinnata*(Lam.)Pers.	vine	anywhere (ordinary soil)	Anytime	handpicking

Table 4 Continued.

LOCAL NAME	SCIENTIFIC NAME	GROWTH HABIT	COLLECTION SITE(S)	GATHERING PERIOD	MODE OF GATHERING
Busikad	*Cyperus kyllingia* f. *humilis* (Boeckeler)	grass	lawn, roadsides especially in wet areas	All year round	handpicking
Espada-espada	*Sansevieria spp.*	herb	tropical and sub-tropical areas	All year round	handpicking
Balanghoy	*Manihot esculenta* Crantz	herb	poor soil with a little water	8 – 12 months after planting	handpicking
Tuba-tuba	*Jatropha curcas* Linn	herb	anywhere (ordinary soil, sandy, gravely or rocky soil)	All year round	handpicking
Asunting	*Cassia alata* Linn.	herb	thickets on mountain slopes, waysides, fields	All year round	handpicking
Uag / Uai	*Flagellaria indica* Linn.	herb	tropical and sub-tropical areas	All year round	use of bolo
Bago	*Gnetum gnemon* Linn.	herb	mountain	June -July	cutting by sickle or bolo
Sangig	*Ocimum basilicum* L.	herb	anywhere (ordinary soil)	All year round	handpicking
Wachichao	*Orthosiphon aristatus* (Blume) Miq.	herb	tropical and sub-tropical areas	All year round	uprooting
Mani-mani	*Desmodium heterocarpon* (L.) DC.	herb	tropical and sub-tropical areas	All year round	uprooting

LOCAL NAME	SCIENTIFIC NAME	GROWTH HABIT	COLLECTION SITE(S)	GATHERING PERIOD	MODE OF GATHERING
~~Elkway~~ Eskubang- mayawis	~~*Abelmoschus manihot* L. Medikus~~ *Sida* acuta Burm. f.	~~shrub~~ shrub	~~anywhere (ordinary soil)~~ anywhere (ordinary soil)	~~All year round~~ All year round	~~handpicking~~ handpicking
Ahimit / Labog	*Fucaria suratensis* Kostel	shrub	loam soil	June to July	handpicking
Panyawan	*Tinospora rumphii* Boeri. is a synonym of *Tinospora crispa* (L.) Hook. f. & Thomson	Climbing vine	tropical areas	Allyear round	handpicking
Lagnob	*Ficus septlca* Blanco *Ficus septica* Burm.f.	shrub	anywhere (ordinary soil)	All year round	handpicking
Kamongsi	*Artocarpus camansi* Blanco	tree	tropical and sub-tropical areas	All year round	use of bolo
Sinaw-sinaw	*Peperomia pellucida* (L.) Kunth	herb	anywhere (ordinary soil)	All year round	uprooting
Bila-blla	*E/eusineindica*	herb	anywhere (ordinary soil)	Alt year round	uprooting
Galot	*Saccharum spontaneum*	herb	anywhere (ordinary soil)	All year round	use of sickle
Banag	*Smilax bracteata* Presl.	herb	anywhere (ordinary soil)	All year round	uprooting
Oalupang	*Triumfetta bartramia* Linn.	shrub	anywhere (ordinary soil)	All year round	uprooting
Alagasi	*Leucosyke capitellata* Wedd.	herb	anywhere (ordinary soil)	All year round	uprooting
Oulaw	*Curcuma lonfl_a* Linn.	herb	anywhere {ordina soiQ	All lear round	uprootin9

Perception of the plants' socio-economic importance. The 15 participants in the FGDs were asked about the socio-economic importance of plants to their families and tribal community. Their responses are summarized in Table 15.

Table 15. Perceptions of the plants' socio-economic importance

IMPORTANCE/USE	MEAN	DESCRIPTIVE INTERPRETATION
1. source of additional income for the family / provide employment to household members	3.93	Agree
2. provide food and nourishment	4.87	Strongly Agree
3. used in local healing practices or medicinal use	4.00	Agree
4. has ornamental/aesthetic values	2.80	Somewhat Agree
5. Used as animal feedstuff	3.13	Somewhat Agree
6. Has cultural significance	3.80	Agree
7. Used in rituals	2.53	Disagree
Overall Mean	**3.69**	**Important**

Legend:

Mean Score	Descriptive Interpretation	Overall
4.20-5.00	5- Strongly Agree	Very Important
3.40-4.19	4 – Agree	Important
2.60-3.39	3 – Somewhat Agree	Somewhat Important
1.80-2.59	2 – Disagree	Less Important
1.00-1.79	1 – Strongly Agree	Not Important at all

The table above shows that participants strongly agreed that the traditional plants provide food and nourishment to their families and the tribal community. They agreed that the plants provide additional income or employment for the family. Although participants reported that the income earned from growing, gathering, or collecting plants from the wild was minimal, it supplemented their income. They also agreed that some of the plants identified were used in local healing and practices and have cultural significance.

Furthermore, participants only somewhat agreed that the plants were used as animal feedstuff and have ornamental/aesthetic values. On the other hand, participants generally disagreed that the plants identified were used in rituals.

As a whole, the traditional plant resources identified are generally regarded as "important" by the Subanen tribal communities in Zamboanga Sibugay, Mindanao. Some of the most important contributions of these traditional plants to the families and

communities of the Subanens include the provision of food and nourishment, utilized in local healing or have medicinal uses and provide additional income and employment for the family.

Possible threats to the plant species. During FGDs, participants confirmed that generally, the identified plants are still abundant and available in the wilds or forests of Zamboanga Sibugay. However, they are now in a much reduced quantity than several years ago. The major reasons cited for the decline in the population of these traditional plants were: loss and/or destruction of the plants due to armed conflict (f=15); burning of plants due to kaingin activities (f=9); collection sites /areas were eroded because of natural calamities such as typhoons and flash floods (f=8); and overexploitation due to over-collection (f=4).

Conservation initiatives. As revealed during FGDS, participants believed that there is a need to conserve the traditional plant resources since they are sources of food and livelihood of their communities. Most of them employ in situ conservation of some of the plants identified which include: storing or reserving seed stock for next cropping/planting; planting yearly or continuously propagating selected plants in their fields like balanghoy; and domestication of some plant species.

Cultural Practices and Beliefs of the *Subanen* Tribal Communities that are tied with the Utilization of Plants

One cultural belief practiced by the Subanen was connected to bamboo stalks. Several bamboo stalks were placed around the home of a Subanen to drive away bad spirits. Also, burning of calamondin (*Citrofortunella microcarpa*) leaves on the backyard of a Subanen was performed before 6 PM in order to drive away evil spirits.

Phytochemical Analysis of Cobra Vine (*Ipomoea cf. setosa*) Seeds

The presence of phytochemicals found in the seed extracts of cobra vine was determined by standard procedures at the UST Research Center for Natural and Applied Sciences (refer to the laboratory results shown in Appendix 4). Table 16 shows the results of phytochemical analysis.

Table 16. Qualitative phytochemical screening of ethanolic extracts of cobra vine (*Ipomoea cf. setosa*) seeds

PHYTOCHEMICAL	SCREENING TEST	
Flavonoids	Bate-Smith and Metcalf method	+
Alkaloids	Munier and Macheboeuf modification test	+
Polyphenols	Ferric chloride test	+
Tannins	Gelatin test	+

+ Present in the seed extracts

As shown in the qualitative phytochemical screening, the ethanolic extracts of cobra vine seeds were positive for flavonoids, alkaloids, polyphenols and tannins. Using Bate-Smith and Metcalf method, change to reddish color was observed on the sample indicating the presence of flavonoids. According to Cote (2013) phytochemicals are nonnutritive substances in plants that possess health protective benefits. The main phytochemicals in plants are called Flavonoids, and they have extensive biological properties that promote human health and reduce the risk of disease. They extend the activity of vitamin C, act as antioxidants and protect LDL cholesterol from oxidation to unsafe cholesterol oxides. They also contain anti-inflammatory and antitumor properties. Most of these flavonoids are found in the color pigmented part of the plant; therefore, different colored plants will provide protection in different ways.

The Munier and Macheboeuf modification test was applied to determine the presence of alkaloids. The formation of white precipitate was observed in the sample extracts of cobra vine seeds which indicated the presence of alkaloids. Alkaloids are secondary metabolites originally defined as pharmacologically active compounds, primarily composed of nitrogen (Ziegler & Facchini, 2008). They are synthesized from one of the few common amino acids: lysine, tyrosine and tryptophan. More than 12,000 alkaloids, including more than 150 families, have been identified in plants; and around 20% of the ‘species of flowering plants’ contain alkaloids. The biological properties of various alkaloids have led to their use as pharmaceuticals, narcotics, stimulants and poisons (Richard, Temsamani, Cantos-Villar & Monti, 2013).

The Ferric chloride test was used to determine the presence of polyphenols. The test showed a change to dark colored solution after adding $FeCl_3$ solution suggesting that the sample extracts of cobra vine seeds was positive for phenols. Polyphenols are chemicals found in plants that are believed to have important health benefits, according to the American Cancer Society. Many of the health benefits associated with polyphenols may be related to their role as antioxidants. Antioxidants are known for their ability to combat cell damage. Some evidence exists that polyphenols help prevent health dangers such as cancer, high blood pressure, heart disease and diabetes (Rose, 2017).

Finally, the Gelatin test revealed that the sample extracts of cobra vine seeds was positive for tannins. The formation of jelly-like precipitate after adding Gelatin-salt reagent indicates the presence of tannins. Tannins are astringent-tasting polyphenols found in plants that can bind and precipitate proteins. They interact with one or more protein molecules forming large cross-linked complexes that are insoluble in water. This property makes food tannins undesirable since they will make part of the dietetic protein indigestible (Izawa, Amino, Kohmura, Ueda & Kuroda, 2010).

Conclusions

The Subanen tribal communities of Lapuyan, Kalibugan and Binakalan have been practicing and using traditional knowledge because they believe that plants provide food and nourishment and heal in a very effective way without spending any single centavo. They also regarded that plants, like humans, have spirits that must be respected and valued. This belief urges the Subanens to utilize plants even more in a useful and less destructing way, which can be attributed to practicality and political instability they are facing due to pervasiveness of armed conflict. Furthermore, because the Subanens generally have limited access to modern health care services, most of them have no option but to rely on the use of traditional medicine.

The informants were able to report a total of 26 traditional plant species having medicinal values which they use to treat various range of diseases and seven (7) plant species utilized both as food and medicine. This total of 33 plant species.

The 33 species of plants documented are under 24 families and are mostly represented by herbs. Three plant species each were under Family Asteraceae and Malvaceae, respectively.

Leaves are the most frequently utilized plant part of the Subanens for food and medicine. These plants are generally available from forest, fields and roadsides. The most common techniques used in the preparation of medicines by the Subanens are through decoction and poultice. In decoction, plant parts are boiled with water and the crude extract is used, while in poultice plant materials are mashed or crushed with warm water or natural oils to make a paste. Decoction is usually taken orally. The paste from the poultice is commonly applied directly to the affected parts.

Majority of the plant species documented are available all year round suggesting the abundance of the plants in the wilds. Handpicking is the most common method of gathering the plant resources in the fields.

Subanens in Zamboanga Sibugay considered the plant resources as important to their families and community. The most important contributions of these plants include

the provision of food and nourishment, utilized in local healing or have medicinal uses and provide additional income and employment for the family.

The loss and destruction of the plants due to armed conflict in Zamboanga Sibugay is the major threat to the existence of the plant species as disclosed by the informants. Burning of plants due to kaingin activities and the collection sites /areas were eroded because of natural calamities such as typhoons and flash floods were also identified as threats to the existence of the traditional plants.

Despite the traditional way of life of the Subanens, they still engage in some activities to conserve the traditional plant resources. These conservation activities include: storing or reserving seed stock for next cropping/planting; planting yearly or continuously propagating selected plants in their fields; and domestication of some plant species.

Finally, the phytochemical screening of the ethanolic extracts of cobra vine seeds revealed the presence of flavonoids, alkaloids, polyphenols and tannins. Since phytochemicals are nonnutritive substances in plants that possess health protective benefits, it can be inferred that cobra vine seeds possess medicinal and nutraceutical potential. Likewise, cobra vine can be investigated to create an evidence base that will facilitate their inclusion in medical practice and as food supplement and additives in the food industry.

Compliance with Ethical Standards

This research study followed ethical guidelines. The respondents' participation was voluntary. They were to opt to dismiss themselves from the study at any point in time they felt uncomfortable. Their participation was protected from harm: physical, social, psychological, and all other forms of harm were kept to an absolute minimum. The dignity and well-being of informants who responded were always protected. The research data remained confidential throughout the study, and the respondents' rights were protected, ensuring scientific or academic integrity. Furthermore, to ensure that this research study is free of plagiarism or research misconduct, proper result communication must be practiced. The author declares no conflicts of interest about the publication of this paper.

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EVIDENCE-BASED EXPLORATION OF INFECTION PREVENTION PRACTICES AMONG HEMODIALYSIS NURSES

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ABSTRACT

This study determined the infection prevention practices among hemodialysis nurses in private and government dialysis centers in Eastern Pangasinan. It tackled their age, sex, civil status, highest educational attainment, number of years in hemodialysis centers, relevant training for the past two years, and category of health facility. The study utilized the quantitative and qualitative research design, as well as a survey questionnaire and structured interview guide questions, as the primary tools for gathering data. In terms of the qualitative aspect, the narration of the responses was noted down. In the quantitative aspect, several statistical tools were used, such as frequency and percentage, weighted mean, t-test, Scheffe test, and ANOVA (Analysis of Variance). The nurse respondents were young adults, female-dominated, bachelor's degree holders, had been in the dialysis center for 3-4 years, had attended a few numbers of seminars, and were employed in private dialysis centers. The extent of nurses' practices in the prevention of nosocomial infection among hemodialysis patients is highest during hemodialysis, followed by after hemodialysis, and lowest before dialysis. Significant differences were noted in terms of age, civil status, and number of years in service. The age of nurses affects their practices in preventing nosocomial infection among hemodialysis patients before, during, and after hemodialysis. Married nurses significantly provide a higher level of practice in preventing nosocomial infection than single nurses. The number of years of service affects the practices of nurses in preventing nosocomial infection after hemodialysis. The lower the level of the highest educational attainment of the nurses, the more they practice the proper prevention of nosocomial infection before, during, and after hemodialysis. It implies that even those who have a bachelor's degree render the correct practices in the prevention of nosocomial infection.

Keywords: *Infection, Prevention, Hemodialysis, Practices, Nurses*

INTRODUCTION

It happens in a healthcare facility that nosocomial infection sets in among patients. It is a significant risk to patient and staff safety. Hemodialysis (HD) patients and dialysis staff are vulnerable to healthcare-associated infections due to frequent and prolonged exposures in the Hemodialysis environment. The increased risk is mainly related to the immune-compromised status of dialysis patients, frequent and prolonged blood exposure during Hemodialysis treatments through vascular access and extracorporeal circuit, proximity to other patients during treatment in the Hemodialysis facility, frequent contact with healthcare workers, who frequently move between patients and between machines, frequent hospitalization and surgery, and non-adherence or breaks in the practices (Karkar, 2018). It clearly shows that nosocomial infections happen in hemodialysis centers because patients are more vulnerable due to lower body resistance. Health workers are also prone to infections due to their continuous exposure to patients.

Waste management needles should be disposed of in closed, unbreakable containers. A "no touch" technique should be used to drop the needle into the container. If this is difficult due to the design of the container, staff should complete patient care before disposing of needles. Nurses should be involved in multi-professional discussions where decisions are made about changes in patient treatment. Nurses must have the clinical skills and competencies to manage renal patients in different stages of their illness. Many infection control measures, such as appropriate hand hygiene, consistent use of aseptic technique, cleaning, and disinfection practices, are simple but require staff accountability and behavioural change, in addition to improving staff education, reporting, and surveillance systems. Infection control and prevention is the responsibility of the nurse and represents an integral element of the patients' safety program. It encompasses the processes and activities that identify and reduce the risks of acquiring and transmitting infections among individuals. Therefore, nurses should have professional and ethical responsibilities to make sure that their knowledge and skills regarding infection control are up-to-date and that they practice safely and competently (Uoda, 2019). It is also the responsibility of the health workers to dispose of used needles and other equipment used in Hemodialysis. Hospitals are provided with trash bins that are color-coded depending on the category of the waste material. Aside from this, the health care worker must practice proper hand hygiene, which is the simplest way of preventing infection.

Dialysis is a life-saving treatment for patients of all ages with end-stage kidney diseases. Infection prevention and control in an artificial kidney unit or a dialysis setting is essential to protecting the health of these vulnerable patients. Hemodialysis is a life-saving treatment, but dialysis carries the risk of infection that could be life-threatening, which requires strict adherence to infection prevention, including hand hygiene. Since hemodialysis does the work of the kidneys by cleansing a patient’s blood, a lack of infection prevention and control could result in a life-threatening infection. Infection is a leading cause of hospitalization and the second leading cause of death for dialysis

patients. Life-threatening infections that could occur through dialysis include: During dialysis, patients could spread respiratory viruses among each other and health care workers without the proper infection prevention processes in place. Diseases such as COVID-19 and influenza can spread in a dialysis clinic. You can reduce the risk of this spread with proper hand hygiene, including the use of alcohol-based hand sanitizer, personal protective equipment such as face masks, and educating patients to practice respiratory hygiene such as coughing or sneezing into the inside of the elbow to avoid droplet spray or using a tissue, disposing of the tissue immediately after use, and cleaning hands after coughing or sneezing. Dialysis facilities should provide tissues and hand sanitizers for patients and visitors to comply with respiratory hygiene. Patients with upper respiratory symptoms should be provided (Perri, 2022). The healthcare worker needs to safeguard themselves in the HD center. The use of personal protective equipment is necessary to prevent transmission of infection while attending to their patients. Aside from hand washing, they can still use hand sanitizers or alcohol to kill the microbes.

Patients with end-stage renal disease (End Stage Renal Disease) are vulnerable to infectious diseases due to their impaired immunity and high risk of exposure to pathogens. Dialysis patients are prone to bloodborne infections transmitted through needles, transfusions, and dialysis catheters. It is essential to establish infection control measures to prevent the transmission of pathogens in hemodialysis facilities. The infection prevention and management program should include infection surveillance and monitoring processes, strategy development to reduce or minimize the risk of infection and evaluation and feedback processes for redesigning and implementing the revised program.

The dialysis room should be monitored for a certain period so that infection control issues can be identified in terms of the units, infection sites, microorganisms, and others. Ongoing surveillance activities may identify health-associated events or problems about which recommendations and action plans can be developed to minimize infection transmission and reduce future incidents (Park et al., 2018). The Hemodialysis centers must enhance their infection control protocols to minimize the incidence of infections among their patients. Proper monitoring and evaluation of their services must be done regularly to improve their services.

Gloves are to be worn for touching blood and body fluids, mucous membranes, or non-intact skin of all patients; for handling items or surfaces soiled with blood or body fluids; and for performing vascular access procedures where blood spill is likely. Gloves should also be worn when touching the patient’s equipment or other environmental surfaces. Disposable gloves are for single use only and come in a variety of materials, such as vinyl, latex, and nitrile. Gloves are to be changed and hands washed after contact with each patient, whenever the gloves are bloodstained, and after handling infectious waste containers. Hand hygiene should be performed using soap and water or alcohol-based antiseptic hand rubs. Sharps containers should not be mounted too high but should be easily accessible. They also should not be allowed to overfill (Cuison, 2020). The HD center must have adequate personal protective equipment supplies for their healthcare

workers, particularly disposable consumables because transmission of infection is very high. Fluid splashes can happen during the procedure, so the healthcare worker must be careful when handling discharges.

To minimize the need for emergency mouth-to-mouth resuscitation, mouthpieces, pocket masks, resuscitation bags, or other ventilation devices should be available for use in areas where the need for resuscitation is predictable. Masks and goggles or full-face shields shall be worn during any procedure likely to generate droplets, blood splashes, or body fluids near the face. Masks should fully cover the nose and mouth. Goggles should fit snugly over and around the eyes. Personal eyewear, such as prescription glasses, is not a substitute for protective eyewear. Face shields should cover the forehead, extend below the chin, and wrap around the side of the face when worn correctly. Initiating and terminating dialysis and troubleshooting vascular access may increase a healthcare worker's risk of exposure to bloodborne pathogens.

The Hemodialysis setting presents a challenge for environmental cleaning and disinfection because of the demand for rapid turnover of stations. Dialysis center staff often feel rushed to complete tasks, especially when transitioning patients on or off machines. Under these pressures, personnel may eliminate or take shortcuts in steps essential for preventing infection transmission. If contaminated surfaces turned over quickly are not adequately cleaned and disinfected, bloodborne and other pathogens may remain alive and infectious for days. Dialysis centers should allow adequate time between patients for thorough cleaning and disinfection.

All surfaces of the dialysis station, including the machine and patient chair, should be cleaned and disinfected using a hospital disinfectant. Cleaning and disinfection should commence once the patient has left the station to prevent cross-contamination. Internal surfaces of the dialysis machine should be regularly disinfected following the manufacturer's instructions. Written protocols outlining the steps should be in place, and using a log can help document and keep track of cleaning and disinfection. Clean and contaminated areas should be separated in the facility, with clean supplies and medication preparation areas having adequate spatial separation from contaminated equipment storage (Cuison, 2020). Proper equipment cleaning must be done after each procedure to be ready with the following scheduled patients. Sterilization is usually done to used equipment to make it sterile and safe for patient use.

The proximity of patients on dialysis to one another and healthcare workers can increase the transmission of infection. Standard precautions can reduce the risk of transmission of many common germs when used for every patient encounter across the continuum of care. The practices included in standard precautions are hand hygiene, use of personal protective equipment, respiratory hygiene, appropriate patient placement, careful handling of textiles and laundry, and safe injection practices. Chief among these is hand hygiene, which has long been a cornerstone of infection prevention and control. Alcohol-based hand sanitizer is more convenient and efficient than handwashing with soap and water and is the preferred hand-sanitizing product for these types of care settings. (Millson, 2022). Nosocomial infections can be reduced once the equipment is

cleaned vigorously, and proper packing and storage must be done. Proper hand hygiene practice is an action by health workers to lessen the transmission of infection.

According to Vijayan and Boyce (2018), outbreaks of infections in hemodialysis centers continue to occur due to poor infection control practices. Patients with End Stage Kidney Disease treated with Hemodialysis are at substantially increased risk of life-threatening infections. Most bloodstream infections are related to vascular access, of which 70% are associated with using a central venous catheter. Infections result in significant morbidity and are second only to cardiovascular diseases as a cause of mortality in patients with End Stage Kidney Disease. Patients on Hemodialysis are susceptible to viral infections, including hepatitis B, hepatitis C, HIV, and influenza. Lapses in infection control practices, such as hand hygiene and environmental cleaning, have been associated with bloodstream infections and HCV outbreaks. The Centers for Disease Control strongly recommends several infection control procedures, including hand hygiene, appropriate catheter care, antiseptic agents, checklists, and staff and patient education, all of which are vital to reducing infections. Dialysis personnel should be thoroughly trained in Standard Precautions and other infection control measures. It is vital that healthcare workers strictly follow infection control protocols.

According to the Disease Control and Prevention (CDC) (2023), the dialysis facility environment may be a source of infection transmission. Inadequately cleaned and disinfected dialysis stations, Hemodialysis machines, effluent drain wall boxes, and other equipment have been implicated in transmitting pathogens in Hemodialysis facilities.

The CDC provides detailed guidelines and checklists for disinfecting dialysis stations, emphasizing that this process should occur once patients have exited the Hemodialysis unit. Single-dose and multi-dose medication vials are also essential in preventing infection transmission. Single-use should only be accessed once, and multi-dose vials should be dedicated to one patient whenever possible. Medications and saline syringes should be prepared in a dedicated, clean, separate area in the dialysis unit and taken to individual stations by hand. A medication cart should not be used to take medications from station to station because this has been associated with the transmission of infections. Reuse of dialyzers has been associated with outbreaks of gram-negative bloodstream infections, and reuse facilities must ensure strict adherence to sterilization protocol to mitigate the risk of infection transmission.

In the study conducted by Bayoumi et al. (2019) among nurses on infection control practices, the overall nurses' performance regarding infection control at enrolled dialysis units demonstrated that half of the nurses had met most steps. In addition, the first and second observations showed that nurses ignored hand hygiene and needed to be committed to wearing clean gloves as needed. The practice of hand hygiene is not taken for granted because they are exposed to body fluids from their patients, which might be a source of transmission of infection.

In the findings of Sugawara et al. (2021) on the measures for the prevention of infection in dialysis units, half of the responding facilities were hospitals with multiple

departments, and the other half were clinics specialized in dialysis. Several infection prevention measures, such as health checks of staff and patients, donning of masks before and after Hemodialysis, and disinfection of frequently contacted areas, were implemented during the COVID-19 pandemic. There was a significant improvement in the implementation rate of these measures during the pandemic, compared to before, which reached over 90%. More than half of the facilities reported a shortage of disposable masks and hand sanitizer alcohol. Isolation of COVID-19 patients in private rooms was possible only in 52.7% of the facilities. Most facilities could not accept COVID-19 dialysis patients due to insufficient space and workforce. Nosocomial transmission of COVID-19 occurred in 4.0% of the facilities. Of those infected, 51.9% were staff.

It revealed that most hemodialysis facilities in Japan had improved implementation of infection control measures and had a shortage of PPEs and disinfectants, though some facilities did not implement infection prevention measures adequately, mainly due to their limited space. It may be recommended that each facility immediately establish isolation measures to prepare for the pandemic of COVID-19.

Patients with chronic kidney disease on hemodialysis are often at risk for infection, and the key role of the nursing team, active in the nephrology unit, is to have extensive knowledge about the principles of infection control. The study focused on nursing care aimed at preventing infection in patients undergoing Hemodialysis.

It showed 11 nursing care sessions directed at preventing vascular access infection, especially with the central venous catheter. They identified four articles with ten general care on preventing infection in hemodialysis patients. Finally, care is directed to surveillance policies to prevent infection in hemodialysis patients (Brandao et al., 2018). It must be part of the protocol of Hemodialysis centers to revisit their infection control policies to identify gaps in their old policies. Healthcare workers must also be trained on Hemodialysis updates to improve their nursing care for their patients.

Qin et al. (2021) found in their study that the mask-wearing rate of patients increased. Hand sanitizer consumption increased significantly during the COVID-19 pandemic. Hand hygiene compliance rates increased in physicians, nurses, and other employees before the pandemic. The incidences of UTRI and pneumonia decreased during the pandemic. Notably, catheter-related, and digestive tract infections also decreased during the pandemic. As a result, the incidences of UTRI, pneumonia, catheter-related infections, digestive tract infections, and other sites decreased during the pandemic. The study indicated an association between mandatory mask-wearing and reinforced hand hygiene education and decreased respiratory, catheter-related, and digestive tract infection episodes in the hemodialysis unit.

Uoda (2019) assessed the knowledge, attitudes, and practices regarding standard precautions concerning Hospital-acquired protection (HAIs) among hemodialysis nurses in hemodialysis centers in Mosul.

There were 25 hemodialysis nurses in hemodialysis centers in Mosul. All agreed to participate in the study. Although 72% of the nurses knew that their hands could be a source of infection associated with health care, only 36% of the nursing staff washed their hands before contacting another used 92% of the nursing staff when contacting the patient in the dialysis unit and 40% of nursing staff also wore masks when contacting the patient.

Gloves were used by 98% of the nurses. 46% of the nurses were usually wearing masks when contacting a patient. Books and journals were the primary sources of information about (HAI) among 52% of the nurses. It concluded that the nurses' knowledge of healthcare-related illnesses did not fulfill this purpose because some nursing staff needed to adhere to personal hygiene practices. The necessary training programs for nurses in hemodialysis centers on promoting hygiene standards and optimal use of personal protection against hospital infection were recommended.

Tabash et al. (2018) studied healthcare workers' compliance with infection control in hemodialysis units. They revealed that hospital management needs to practice its role more efficiently in encouraging healthcare providers to comply with infection prevention and control protocols. Most of the study participants needed adequate infection prevention and control protocol training. The findings of the standard precaution showed that the compliance with hand hygiene score was 56.2%, personnel protective equipment score was 87.5%, using waste management score was 39.6%, environmental infection control practices score was 54.3%, and aseptic technique score was 62.8%. However, the additional precaution score was 56.5%.

Moreover, the study revealed that 45.8% of the health care providers were exposed to an injury from used needles or sharp medical instruments. The study also found that 93.5% of the healthcare providers in the hemodialysis unit received the recommended three doses of the hepatitis B vaccine. It concluded that there is a need to develop an infection prevention and control protocol, particularly for the hemodialysis unit. Continuous education and training programs for healthcare staff and physical environmental fitness concerning Infection Prevention and Control protocol should be implemented. Training is essential for the HD staff to be abreast with the latest updates in the care of HD patients.

Theoretical/ Conceptual Framework

The study used the Health Belief model. HBM is a popular model applied in nursing, especially in issues focusing on patient compliance and preventive healthcare practices. The model postulates that health-seeking behavior is influenced by a person's perception of a threat posed by a health problem and the value associated with actions aimed at reducing the threat. The Health Belief Model addresses the relationship between a person's beliefs and behaviors. It provides a way to understand and predict how clients will behave about their health and how they will comply with healthcare therapies.

The nursing goal for patients undergoing hemodialysis includes preventing or minimizing complications, supporting adaptation to change, providing information on the prognosis and treatment regimen that is well understood, and managing pain.

Swanson's Caring Theory was also used to facilitate the Process of "knowing" and "being with" while performing direct nursing care and attentive listening to assist the patient in becoming more open-minded and expressing personal perceptions toward the disease to engage the patient further to increase self-awareness recognition, sense of loss, and negative perceptions. The theories were adapted since they are a good fit for studying clients undergoing dialysis.

Box one- the Input dealt with the profile of respondents and the infection prevention practice for nosocomial infections among patients undergoing hemodialysis. Box two- the Process dealt with data gathering using the questionnaire and the interview guide questions. Box three- the Output tackled the proposed intervention plan to improve the infection prevention practices for nosocomial infections among hemodialysis patient.

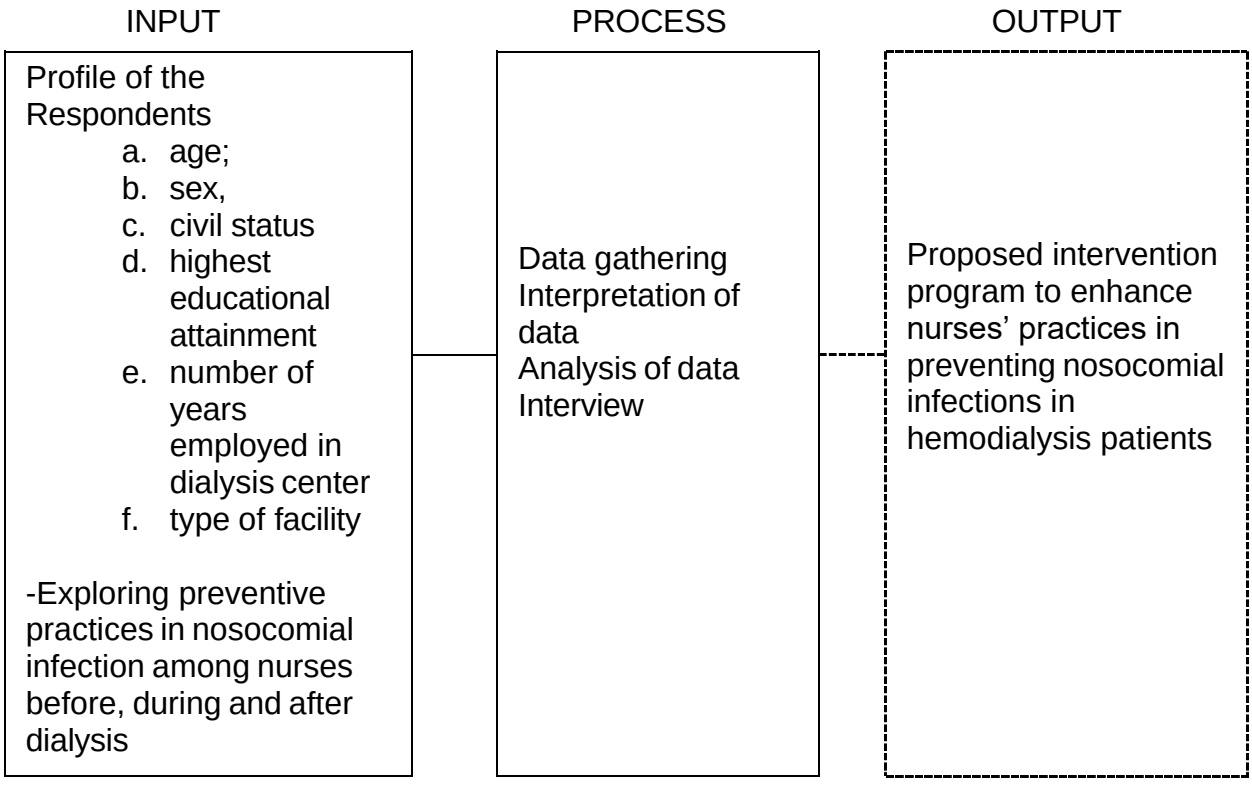


Figure 1. Research Paradigm

RESEARCH QUESTIONS

This study explored the practices of nurses in preventing nosocomial infections in patients undergoing hemodialysis. Specifically, it sought to answer the following questions:

1. What is the profile of the respondents in terms of their;
    a. age;
    b. sex;
    c. civil status;
    d. highest educational attainment;
    e. number of years working in a hemodialysis center,
    f. relevant training has been in hemodialysis for the past two years, and
    g. category of a health facility?
2. What are the practices of the respondents in preventing nosocomial infections in hemodialysis
   patients along;
    a. before hemodialysis;
    b. during hemodialysis; and
    c. after hemodialysis?
3. Is there significant difference between the prevention practices in nosocomial infection before, during and after hemodialysis across their profile variables?
4. Is there significant relationship between the prevention practices in nosocomial infection before, during and after hemodialysis across their profile variables?
5. What enhancement program can be proposed to enhance the practices of health workers in the prevention of nosocomial infection?

Null Hypothesis

This study was tested in its null form at 0.05 level of significance that;

1. There is no significant difference between the prevention practices in nosocomial infection before, during, and after hemodialysis across their profile variables
2. There is a significant relationship between the prevention practices in nosocomial infection before, during, and after hemodialysis across their profile variables

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METHODOLOGY

This chapter outlines the research methodology, encompassing discussions on the research design, subjects of the study, sampling scheme, data gathering instruments, data gathering procedure, statistical treatment of data, and tools for data analysis.

Research Design

The study employed the exploratory mixed method and concurrent research design with the questionnaire as a data-gathering tool and structured interview guide questions to explore the prevention practices of nurses in preventing nosocomial infection among hemodialysis patients. The researcher collects and analyzes qualitative data, leveraging these findings to construct the subsequent quantitative phase. Results were merged during data analysis. Quantitative analysis employs descriptive and inferential statistics, whereas qualitative analyses produce expressive data that provide descriptive details to examine the study's objectives.

Population and Locale of the Study

The study's respondents were hemodialysis nurses in Eastern Pangasinan's public and private dialysis centers. They were present during the data gathering, which consisted of 75 respondents.

Data Gathering Tool

The study utilized two types of data-gathering methods: The researcher employs a survey questionnaire and a structured interview guide to gather data. A survey questionnaire was based on Millson, 2023 and previous studies and articles related to the study. Part I focused on the profile of the respondents in terms of their age, sex, civil status, highest educational attainment, number of years assigned in the dialysis center, and type of facility. Part II explored the prevention practices of nurses in preventing nosocomial infection in patients undergoing hemodialysis before, during, and after dialysis. Moreover, along with the qualitative part, interview guide questions were made following the sequencing of the questionnaire.

Data Gathering Procedures

Before gathering data, the researcher secured permission from the Dean of the Institute of Graduate and Advanced Studies to conduct the study. When permission was granted from the Institute of Graduate and Advanced Studies, the researcher submitted the letter of request to the Chief of Hospital/ Medical Director or Head of Dialysis Centers through their Chief Nurses. After securing the permission, the researcher secured consent from the respondents. The researcher collected the data personally.

On the qualitative aspect, the researcher scheduled the interview with selected hemodialysis nurses. However, only 4 HD nurses were available for the interview. The researcher ensured that ethical precautions and procedures were met. In the whole process of this study, the researcher considered ethical precautions to follow.

Treatment of the Data

Frequency and percentage were used for Problem No.1 on the respondent’s profile.

The frequency was determined based on the number of respondents who answered or checked a particular item on the questionnaire.

Formula: $P = \frac{F \times 100}{N}$

where: P = percentage

F = frequency

N = total number of respondents

Problem No. 2: The prevention practices of nurses on nosocomial infection in hemodialysis centers—the weighted mean was used before, during, and after dialysis. The weighted mean is the mean of a set of values wherein each value or measurement has a different weight or degree of importance. This study used a five-point rating scale system, as shown in the table below.

Formula:

The weighted mean is the mean of a set of values wherein each value or measurement has a different weight or degree of importance.

Formula: $\overline{x} = \frac{\sum fi}{N}$

where: "$\bar{x}$" = weighted mean

N = total # of population; and

fi = frequencies corresponding to the given items.

Literal Value	Statistical Limit	Descriptive Equivalent	Transmuted Rating
A	4.50 – 5.00	Always	Highly Practiced
B	3.50 – 4.49	Often	Practiced
C	2.50 – 3.49	Sometimes	Moderately Practiced
D	1.50 – 2.49	Seldom	Slightly Practiced
E	1.00 –1.49	Never	Not Practiced

RESULTS AND DISCUSSION

This chapter presents the findings of the study based on the data gathered from the nurse respondents.

Narrations of Participants

Participant No. 1- John

He is a 37-year-old male with a master's degree who has worked in the dialysis center for three years in a *government dialysis center.*
*According to John, "*Kaming mga nurses dito had undergone training for us to be competent in this field. I ensured we observed the standard precautions to give optimal care to the access site. I prepare the patient for hemodialysis. I prepare all the needed equipment before we start the procedure. I make sure that infection will not set into my patients. I had to do a lot of preparation before the procedure. To control infection, we used solutions to disinfect the tools used. The water supply is adequate in the center, so we do handwashing before and after each procedure. All of us health team members used gloves, masks, haircaps, and other Personal Protective Equipment to ensure that infection transmission would not occur, especially those with infectious comorbidities like Pulmonary Tuberculosis and pneumonia. I made sure to check that patients are vaccinated with flu vaccine and Hepatitis B."
It revealed that the nurses had undergone the necessary training on hemodialysis. It is essential that the nurses be competent in attending to patients undergoing hemodialysis, particularly in preventing infections, since the patients are vulnerable to infections.

During Dialysis

During the procedure, he cited, "I maintained that a limited watcher was present in the room. I managed discharges by making sure there would be no leaks and splashes. To dispose of the discharges, I placed gloves in a sealed container"."

He continues, "I take vital signs to ensure the patient is alright. Limited interactions were done, so there will be a focus on the procedure. After dialysis, the patient is prepared for transfer to another bed. The patient is placed in isolation for those with infectious conditions.

During the procedure, the nurses had to protect themselves because, at times, there are splashes of fluids that may happen, and they should be ready with it to avoid transmission of infection, especially if an infectious disease is present in the patient.

After Dialysis

After the procedure, he continued, "I clean the site for fluid splashes, the patient is cleaned from leaks or fluids and transported to the room, and vital signs monitoring is continued. I wash used tools, and proper packing is done before it is autoclaved. Other tools were soaked in Lysol solutions for disinfection."

The participant's response corroborates with the study's findings that the nurses perform prevention practices among patients undergoing hemodialysis. Nurses equally have the skills to care for patients undergoing hemodialysis.

Participant No. 2. Nora

She is 28 years old, single, has a bachelor's degree, has been in the service for 11 months, and works in a private clinic.

During hemodialysis

She narrated, "Before the procedure, I prepared the access site using an aseptic technique using antiseptics. I prepare the patient physically and emotionally so that the patient can cooperate throughout the procedure. I arrange the tools needed, if injury happens, I wash my hands, and reports to the head nurse. Throughout the procedure, we all used personal protective equipment to prevent splashes and infection transmission. We made sure that the environment is maintained to be clean and hygienic."

During the procedure, the nurses have to allay the condition of their patients to have a smooth flow of the procedure and also for them to be cooperative. PPES must be worn for whatever eventualities may arise. They safeguard their patients as well as themselves.

After dialysis

After the procedure, she cited, "I clean the site for any fluid leaks. We use Lysol solutions to soak some equipment. The collected blood samples are extracted, and then I send them to the laboratory."

It shows that the participants' narration is related to the study's findings. It clearly mentions that nurses perform activities to prevent nosocomial infection during hemodialysis.

Participant No. 3-Karlo

He is a 35-year-old male with a bachelor's degree, two years in service, and works in a public hospital.

Before hemodialysis

He narrates, "I do handwashing in the faucet using soap and water. I made sure to use gloves, other personal protective equipment, and a hair cap to protect us from fluid leaks. In the center, we have an adequate supply of antiseptic and alcohols because these are very important."

During hemodialysis

He continued, “I disinfect the site using betadine and alcohol. If an injury happens, I wash with soap and water and report it to the head nurse. We use an N95 mask and other PPEs during the procedure. We continuously check the site while the procedure is going on. If untoward symptoms occur, we refer to the doctor and give whatever treatment is ordered.

Participant No. 4-Myra

She is 39 years old, holds a bachelor's degree, and has been working for 14 years in a private dialysis center.

Before hemodialysis

Before the procedures, he narrated, "I prepare the patient physically and emotionally to win her cooperation during the procedure. The team practices proper handwashing using tap water from the faucet. The whole team uses Personal Protective Equipment during the entire procedure. In the center, we have adequate supplies of tools for the procedure. Those patients with comorbidities are separated from other patients like those with Pulmonary Tuberculosis and pneumonia.*"*

During Hemodialysis

She continues," Before the start of the procedure, the patient is prepared together with the tools, medications, and solutions. If anything arises during the procedure, like an injury, I report it immediately to the head nurse. In cases of leaks, handwashing is done immediately, and gloves that have been punctured are disposed of. The whole team uses Personal Protective Equipment’s to safeguard ourselves from transmission or splashes of fluids."

After hemodialysis

After the procedure, "I prepare the patient for transfer to his bed to monitor vital signs. Once stable, the specimen samples are labeled, and I send them to the laboratory. Patients with infectious illnesses are separated from the others. Then, I wash and cleanse the tools used and prepare them for sterilization. All the used PPEs are discarded immediately and placed in a closed container. If problems occur, we respond immediately to prevent the incidence of complications."

It revealed that the participant nurse's narration corroborates the study's findings. They have common practices in caring for patients undergoing hemodialysis, which goes to show that the nurses are competent.

Respondent's Profile

Table 1 presents the profile of the respondents in terms of their age, sex, civil status, highest educational attainment, number of years in service in a dialysis center, number of relevant trainings on hemodialysis for the past two years, and type of health facility.

Age. It can be gleaned from the table that the majority of the respondents are in the age bracket of 31-40 years old, with a frequency of 59 or 78.7 percent, followed by 21-30 years old, with a frequency of 14 or 18.7 percent, and 41-50 with a frequency of 2 or 2.7 percent. It revealed that the respondents were young adults. According to Erikson, 31-40 years old are considered young adults. Young adults need to form intimate, loving relationships with other people. Success leads to strong relationships, while failure results in loneliness and isolation. This stage covers the period of early adulthood when people are exploring personal relationships.

Sex. The majority of the respondents were female, with a frequency of 40 or 53.5 percent, followed by males, with a frequency of 35 or 46.7 percent. This shows that nursing is still a female-dominated profession to the present day. Through the efforts of Florence Nightingale in the mid-nineteenth century, nursing was established as a women's profession.

Table 1
Distribution of Respondents in terms of their Profile Variables
n=75

Profile Variables	Frequency	Percentage
Age (in years)		
21 – 30	14	18.7
31 – 40	59	78.7
41 – 50	2	2.7
Sex		
Male	35	46.7
Female	40	53.3
Civil Status		
Single	38	50.7
Married	37	49.3
Highest Educational Attainment		
Bachelor’s Degree	73	97.3
Master’s Degree	1	1.3
Doctorate Degree	1	1.3
Number of Years in		

Profile Variables	Frequency	Percentage
Service in the Hemodialysis Center		
Below 1	5	6.7
1 – 2	29	38.7
3 – 4	31	41.3
5 and above	10	13.3
Number of Relevant Trainings on Hemodialysis for the Past Two Years		
0 – 1	26	34.7
2 – 3	44	58.7
4 – 5	2	2.7
6 or more	3	4.0
Health Facility		
Private	47	62.7
Public	28	37.3

Civil status. Most respondents were single, with a frequency of 38 or 50.7 percent, followed by married, with a frequency of 37 or 49.3 percent. This revealed that the respondents were not into marital relationships and were pursuing their experiences in their field of assignment.

Highest educational attainment. It revealed that most respondents were bachelor's degree holders with a frequency of 73 or 97.3 percent, followed by those with a MAN degree with a frequency of 1 or 1.3 percent, and doctorate degrees with a frequency of 1 or 1.3 percent. It showed that most respondents did not pursue a higher level of learning, which might be related to the fact that their salaries are not competitive, so some nurses fail to enroll in the master's or doctoral program.

Number of years in service. It showed that most respondents were in the service for 3-4 years, with a frequency of 31 or 41.3 percent; 1-2, with a frequency of 29 or 38.7 percent; and five years and above, with a frequency of 10 or 13.3 percent. It revealed that the respondents had been working in hemodialysis centers for a few years, having their experience in preparation for their certification as dialysis nurses.

Number of relevant trainings for the past two years. It can be gleaned that most of the respondents had undergone 2-3 training, with a frequency of 44 or 58.7 percent; those who had attended once, with a frequency of 26 or 34.7 percent; six and above, with a frequency of 3 or 4.0 percent, and 4-5 with a frequency of 2 or 2.7 percent. It reflects that the respondents have undergone a few relevant seminars on hemodialysis, which might be due to limited seminars during the pandemic, where accredited seminars are unavailable.

II. Practices of Nurses in Preventing Nosocomial Infection among Patients

Table 2-4 presents the practices of nurses in preventing nosocomial infection among patients.

Table 2 presents the practices of nurses in preventing nosocomial infection among patients before hemodialysis.

Table 2
Practices of Nurses in Preventing Nosocomial Infection among Patients Before Hemodialysis
n=75

Indicators	WM	TR
1. Training of nurses are required before handling or assisting in hemodialysis and education among.	4.88	HP
2. Donning of mask is done before hemodialysis.	4.84	HP
3. I clean my hands with waterless alcohol-based sanitizer or wash with soap and water before the start of dialysis session.	4.93	HP
4. I make sure optimal care of the access site is observed, such as using chlorhexidine gluconate for skin antisepsis, disinfecting CVC hubs before access.	4.91	HP
5. The water quality is strictly monitored before the procedure.	4.92	HP
6. Patients are checked if they are vaccinated against pneumococcal disease, influenza, and COVID-19.	4.81	HP
7. competency of nurses is periodically assessed to protect patients from avoidable harm.	4.89	HP
8. All surfaces of the dialysis station, including the machine and patient chair, are cleaned, and disinfected using hospital disinfectant.	4.91	HP
9. patients with hepa B, C, and tuberculosis to be treated are isolated to present transmission of infection to others.	4.99	HP
10. standard precautions are observed like use of personal protective equipment, respiratory hygiene, appropriate patient placement, careful handling of textiles and laundry, and safe injection practices.	4.95	HP
AWM	**4.90**	**HP**

Legend:

Statistical Range	Transmuted Rating
4.50 – 5.00	Highly Practiced (HP)
3.50 – 4.49	Practiced (P)
2.50 – 3.49	Moderately Practiced (MP)
1.50 – 2.49	Slightly Practiced (SP)
1.00 – 1.49	Not Practiced (NP)

As gleaned from the table, all the indicators were rated "Highly Practiced." However, the highest indicators are items numbers 3 and 5: "I clean my hands with waterless alcohol-based sanitizer or wash with soap and water before the start of the dialysis session," and "The water quality is strictly monitored before the procedure," with a weighted mean of 4.92 and 4.93, or "Highly Practiced."

It revealed that the nurses washed their hands or used disinfectants before assisting the patient with hemodialysis. Handwashing is simple yet necessary to eliminate microbes from the hands that might affect the patient. According to the Centers for Disease Control and Prevention (2023), keeping hands clean is one of the most important steps to avoid getting sick and spreading germs to others. Not washing hands with soap and clean, running water spreads many diseases and conditions.

The lowest indicator is items numbers 2 and 6, "Patients are checked if they are vaccinated against pneumococcal disease, influenza, and COVID-19," and "Donning of the mask is done before hemodialysis," with a weighted mean of 4.81 and 4.84, or "Highly Practiced." It showed that the nurses checked for patients' vaccinations before hemodialysis. This practice will make them prevent the transmission of microbes from the patients. Wearing masks protects the nurses from transmission of microbes, particularly those aerobic types. According to Stepko (2020), it is essential to check for their vaccination since bacteria spreads when respiratory secretions (think saliva or mucus) are sent through the air by coughing or sneezing and then inhaling. Therefore, using masks is very important among health workers.

Overall, the preventive practices of nurses on nosocomial infection before hemodialysis got an average weighted mean of 4.90, or "Highly Practiced." implies that nurses should observe and practice different activities to prevent nosocomial infection before their patients' hemodialysis. Aside from that, hospitals have established infection tracking and surveillance systems with robust prevention strategies to reduce the rate of hospital-acquired infections.

The participant's response corroborates the study's findings that nurses perform prevention practices among patients undergoing hemodialysis. Nurses equally have skills in caring for patients undergoing hemodialysis.

Table 3 presents the practices of nurses in preventing nosocomial infection among patients during hemodialysis.

Table 3
Practices of Nurses in Preventing Nosocomial Infection among Patients During Hemodialysis
n=75

Indicators	Weighted Mean	Descriptive Equivalent
1. I perform skin preparation properly before the start of hemodialysis	4.92	HP
2. I properly use disposable gloves, eye goggles and other personal protective equipment during hemodialysis	4.91	HP
3. I monitor catheter insertion and ensure prompt removal, and careful attention to techniques for catheterization and catheter care.	4.96	HP
4. I make sure to prevent injuries from sharp instruments	4.95	HP
5. I properly dispose used needles in a closed unbreakable container with a “no touch technique”	4.99	HP
6. I attend to patient incidents and assist patient during hemodialysis	4.97	HP
7. I maintain hand hygiene and observe aseptic technique.	4.95	HP
8. Transmission-based precautions are observed to prevent spread of certain germs through direct or indirect contact, respiratory droplets, or airborne particles.	4.95	HP
9. I maintain a safe, clean, hygienic environment	4.99	HP
10. I use sterilized medical devices and decontamination of equipment	4.92	HP
AWM	**4.95**	**HP**

Legend:

Statistical Range	Descriptive Equivalent
4.50 – 5.00	Highly Practiced (HP)
3.50 – 4.49	Practiced (P)
2.50 – 3.49	Moderately Practiced (MP)
1.50 – 2.49	Slightly Practiced (SP)
1.00 – 1.49	Not Practiced (NP)

As gleaned from the table, all the indicators were rated "Highly Practiced," however, the highest indicators are item numbers 5 and 9, "I properly dispose used needles in a closed unbreakable container with a "no touch technique," and "I maintain a safe, clean, hygienic environment," with a weighted mean of 4.99, or "Highly Practiced." It revealed that the nurses are careful enough in disposing of sharps and needles used during hemodialysis. It is considered contaminated and must be placed in trash bins for

used supplies. According to Piser (2021), sharps are biohazardous medical waste due to their ability to puncture, cut, or tear the skin and expose the injured party to contaminants.

This waste category is considered potentially harmful to humans and animals that come in contact with it, not only because of the risk of injury itself but also because of the potential exposure to dangerous pathogens from blood and other contaminated bodily fluids.

The lowest indicator is items numbers 2 and 10, "I properly use disposable gloves, eye goggles, and other personal protective equipment during hemodialysis," and "I use sterilized medical devices and decontamination of equipment," with a weighted mean of 4.91, and 4.92, or "Highly Practiced." It showed that the nurses observed proper disposal of used PPEs during the procedure. Equipment and tools used during hemodialysis must be placed in covered trash cans to avoid being invaded by flies and other insects, which might create contamination and affect other people.

Overall, the preventive practices of nurses on nosocomial infection during hemodialysis got an average weighted mean of 4.95, or "Highly Practiced." implying that the nurses maintain an aseptic technique and properly dispose of used supplies and PPEs. According to the United States Food and Drugs, Personal Protective Equipment is a barrier between infectious materials such as viral and bacterial contaminants and the skin, mouth, nose, or eyes (mucous membranes). The barrier could block the transmission of contaminants from blood, body fluids, or respiratory secretions.

Moreover, Table 4 presents the practices of nurses in preventing nosocomial infection among patients after hemodialysis.

As gleaned from the table, all the indicators were rated "Highly Practiced," however, the highest indicators are items numbers 3 and 10, "I monitor vital signs and weigh patients after hemodialysis," and "I clean and disinfect dialysis equipment after use," with a weighted mean of 4.96, and 4.97 or "Highly Practiced." It revealed that the nurses monitored and assessed the patients after the procedure. This stage is vital to check patients' condition after hemodialysis to safeguard them from possible complications. According to Brekke (2019), vital signs play an important role in determining patients at risk of deterioration. Even though vital sign changes accurately predict it, clinical deterioration often goes unnoticed or is not detected until it is too late to treat.

The lowest indicator is item numbers 1 and 5, "I disinfect the internal surfaces of the dialysis machine after the hemodialysis," and "I segregate linens, gowns and other textiles used during the procedure," with a weighted mean of 4.87, or "Highly Practiced." It showed that the nurses perform aftercare on the equipment and tools used during the procedure. They segregate the supplies according to their category since they are cleaned and sterilized accordingly.

Table 4
Practices of Health Workers in Preventing Nosocomial Infection among Patients After Hemodialysis
n=75

Indicators	WM	TR
1. I disinfect the internal surfaces of the dialysis machine after the hemodialysis	4.87	HP
2. I handle blood samples and other specimens strictly before submitting to the laboratory	4.91	HP
3. I monitor vital signs and weigh patients after hemodialysis	4.96	HP
4. I properly dispose used mask, gloves, and other materials after hemodialysis	4.93	HP
5. I segregate linens, gowns and other textiles used during the procedure	4.87	HP
6. I assess the signs and symptoms of infection after hemodialysis	4.95	HP
7. I observe the risks associated with catheters after the procedure	4.92	HP
8. I respond immediately if problems with the catheter develop in the dialysis center	4.93	HP
9. I discuss access care at home (e.g., bathing with a catheter) to the patient and significant others	4.92	HP
10. I clean and disinfect dialysis equipment after use	4.97	HP
AWM	**4.92**	**HP**

Legend:

Statistical Range	Transmuted Rating
4.50 – 5.00	Highly Practiced (HP)
3.50 – 4.49	Practiced (P)
2.50 – 3.49	Moderately Practiced (MP)
1.50 – 2.49	Slightly Practiced (SP)
1.00 – 1.49	Not Practiced (NP)

Overall, nurses' preventive practices on nosocomial infection after hemodialysis got an average weighted mean of 4.92, or "Highly Practiced." This implies that the nurses were aware of and practiced aftercare of the equipment used in preparation for the following patients to undergo the procedure, as well as the readiness and functionality of the equipment. Potential risks of this type of dialysis include infection, poor blood flow, blockage from scar tissue, blood clots, anemia, and sudden heart attack.

Participant No. 4 Myra

After the procedure, "I prepare the patient for transfer to his bed to monitor vital signs. Once stable, the specimen samples are labeled, and I send them to the laboratory. Patients with infectious illnesses are separated from the others. Then, I wash and cleanse

the tools used and prepare them for sterilization. All the used Personal Protective Equipment is discarded immediately and placed in a closed container. If problems occur, we respond immediately to prevent complications."

It revealed that the participant nurse's narration corroborates the study's findings. The nurses have standard practices in caring for patients undergoing hemodialysis, which shows that they are competent.

Additionally, Table 5 presents the practices of nurses in preventing nosocomial infection among patients.

As gleaned from the table, all the indicators were rated "Highly Practiced," however, the highest period given the highest aspect is during dialysis, with a weighted mean of 4.95, or "Highly Practiced." This implies that the nurses consider hemodialysis to be the most important because this is when the patient is undergoing the procedure and needs more attention and monitoring.

Table 5
Summary of Practices of Nurses in Preventing Nosocomial Infection among Hemodialysis Patients
n=75

Aspect	WM	TR
Before Hemodialysis	4.90	HP
During Hemodialysis	4.95	HP
After Hemodialysis	4.92	HP
OWM	**4.92**	**HP**

Legend:

Statistical Range	Transmuted Rating
4.50 – 5.00	Highly Practiced (HP)
3.50 – 4.49	Practiced (P)
2.50 – 3.49	Moderately Practiced (MP)
1.50 – 2.49	Slightly Practiced (SP)
1.00 – 1.49	Not Practiced (NP)

The lowest aspect is long before and after dialysis; both are rated "Highly Practiced," with a weighted mean of 4.0 and 4.92. It revealed that the nurses equally practiced preventing nosocomial infection among the patients. Regardless of the hemodialysis period, nurses maintain their utmost care and concern to ensure that nothing happens to the patients while they are in the dialysis center.

Overall, nurses' practices in preventing nosocomial infection among hemodialysis patients got an overall weighted mean of 4.92, or "Highly Practiced." This revealed that

nurses do what is right and proper in preventing nosocomial infection among patients undergoing hemodialysis. Nursing is a caring profession, and nurses know their responsibilities during the procedure.

Part III. Results Stressing the Difference in the Practices of Nurses in Preventing Nosocomial Infection among Hemodialysis Patients across Profile Variables

Table 6-15 presents the results of the difference in the practices of nurses in preventing nosocomial infection among hemodialysis patients across profile variables.

Table 6 presents the results of the difference in nurses' practices in preventing nosocomial infection among hemodialysis patients of different ages.

Table 6
ANOVA Results on the Difference in the Practices of Nurses in Preventing Nosocomial Infection among Hemodialysis Patients across Age

Aspect	Source of Variation	Sum of Squares	df	Mean Squares	F-value	Sig	Remarks
Before Hemodialysis	Between Groups	.494	2	.247	7.339	.001	Significant
	Within Groups	2.425	72	.034			
	Total	2.919	74				
During Hemodialysis	Between Groups	.427	2	.213	12.576	.000	Significant
	Within Groups	1.221	72	.017			
	Total	1.647	74				
After Hemodialysis	Between Groups	.408	2	.204	8.934	.000	Significant
	Within Groups	1.644	72	.023			
	Total	2.051	74				

The computed F-values generated significance values lower than the set .05 level of significance; hence, the results are significant. This means that nurses' age affects their practices in preventing nosocomial infection among hemodialysis patients before, during, and after hemodialysis. The table on the next page reveals the age groups that significantly differ in their extent of practice.

Table 7 presents the significant difference in nurses' practices in preventing nosocomial infection among hemodialysis patients of different ages.

Table 7
Scheffe Test Results on the Significant Difference in the Practices of Nurses in Preventing Nosocomial Infection among Hemodialysis Patients across Age

Aspect	Compared Groups	Mean Difference	Sig
Before Hemodialysis	21-30 vs 41-50	.400	.020
	31-40 vs 41-50	.481	.002
During Hemodialysis	21-30 vs 41-50	.436	.000
	31-40 vs 41-50	.468	.000
After Hemodialysis	21-30 vs 41-50	.386	.045
	31-40 vs 41-50	.446	.001

It is evident in the significant mean differences of their positive values, which indicate that the nurses in the younger health bracket have higher levels of practice in preventing nosocomial infections than those in the older age bracket. It revealed that the younger nurses had more prevention practices because they were still getting their experiences and were more aggressive in giving their care to patients.

Table 8 shows the difference in the practices of nurses in preventing nosocomial infection among hemodialysis patients across sexes.

Table 8
t-Test Results on the Difference in the Practices of Nurses in Preventing Nosocomial Infection among Hemodialysis Patients across Sex

Aspect	Sex	N	Mean	Mean Difference	Standard Error Difference	df	t-value	Sig	Remarks
Before Hemodialysis	Male	35	4.93	.043	.046	73	.939	.351	Not Significant
	Female	40	4.88						
During Hemodialysis	Male	35	4.96	.015	.035	73	.422	.675	Not Significant
	Female	40	4.94						
After Hemodialysis	Male	35	4.93	.011	.039	73	.286	.776	Not Significant
	Female	40	4.92						

The computed t-values provided significance values higher than the set .05 level of significance, hence insignificant results. This implies that the nurses' sex does not affect their practices in preventing nosocomial infections. Nurses, regardless of their gender, render the same practices in preventing nosocomial infections. Daily exposure to these types of patients made them more competent in caring for hemodialysis patients.

Table 9 displays the difference in the practices of nurses in preventing nosocomial infection among hemodialysis patients across civil status.

Table 9
t-Test Results on the Difference in the Practices of Nurses in Preventing Nosocomial Infection among Hemodialysis Patients across Civil Status

Aspect	Civil Status	n	Mean	Mean Difference	Standard Error Difference	df	t-value	Sig	Remarks
Before Hemodialysis	Single	38	4.86	-.096	.045	73	-2.145	.035	Significant
	Married	37	4.95						
During Hemodialysis	Single	38	4.91	-.073	.034	73	-2.181	.032	Significant
	Married	37	4.99						
After Hemodialysis	Single	38	4.87	-.099	.037	73	-2.688	.009	Significant
	Married	37	4.97						

The computed t-values have corresponding significance values lower than the set .05 significance level suggests significant differences in the practices before, during, and after hemodialysis.

The significant negative mean difference indicates that married health workers provide more practice in preventing nosocomial infections.

Likewise, Table 10 reveals the difference in nurses' practices in preventing nosocomial infection among hemodialysis patients across the highest educational attainment.

Table 10
ANOVA Results on the Difference in the Practices of Nurses in Preventing Nosocomial Infection among Hemodialysis Patients across Highest Educational Attainment

Aspect	Source of Variation	Sum of Squares	df	Mean Squares	F-value	Sig	Remarks
Before Hemodialysis	Between Groups	.833	2	.417	14.377	.000	Significant
	Within Groups	2.086	72	.029			
	Total	2.919	74				
During Hemodialysis	Between Groups	.915	2	.457	44.956	.000	Significant
	Within Groups	.733	72	.010			
	Total	1.647	74				
After Hemodialysis	Between Groups	.534	2	.267	12.666	.000	Significant
	Within Groups	1.518	72	.021			
	Total	2.051	74				

The computed F-values provided significance values at the set .05 significance level. This indicates the existence of significant differences in nurses' practices before, during, and after hemodialysis, specifically in preventing nosocomial infection among hemodialysis patients. Furthermore, nurses' educational backgrounds significantly affect such practices. It implies that those with higher educational attainment practice more in preventing nosocomial infection.

Moreover, Table 11 presents the significant difference in nurses' practices in preventing nosocomial infection among hemodialysis patients across the highest educational attainment.

Table 11
Scheffe Test Results on the Significant Difference in the Practices of Nurses in Preventing Nosocomial Infection among Hemodialysis Patients across Highest Educational Attainment

Aspect	Compared Groups	Mean Difference	Sig
Before Hemodialysis	Bachelor's Degree vs Doctorate Degree	.914	.000
During Hemodialysis	Bachelor's Degree vs Doctorate Degree	.962	.000
Before Hemodialysis	Bachelor's Degree vs Doctorate Degree	.732	.000

The results of the Scheffe Test reveal that nurses who finished their Bachelor's degree have significantly higher levels of practice in preventing nosocomial infection before, during, and after hemodialysis than the respondent who has a doctorate implies that even nurses who earned Bachelor's degrees showed their competencies in preventing nosocomial infection in patients undergoing dialysis. They are the ones in direct contact with patients. Thereby, they have mastery in handling hemodialysis patients.

Table 12 shows the difference in nurses' practices in preventing nosocomial infection among hemodialysis patients across the number of years they have been in service in the hemodialysis center.

Table 12
ANOVA Results on the Difference in the Practices of Nurses in Preventing Nosocomial Infection among Hemodialysis Patients across Number of Years in Service in the Hemodialysis Center

Aspect	Source of Variation	Sum of Squares	df	Mean Squares	F-value	Sig	Remarks
Before Hemodialysis	Between Groups	.244	3	.081	2.160	.100	Not Significant
	Within Groups	2.675	71	.038			
	Total	2.919	74				
During Hemodialysis	Between Groups	.124	3	.041	1.933	.132	Not Significant
	Within Groups	1.523	71	.021			
	Total	1.647	74				
After Hemodialysis	Between Groups	.235	3	.078	3.068	.033	Significant
	Within Groups	1.816	71	.026			
	Total	2.051	74				

The computed F-value with significance values higher than the set .05 level of significance before and during hemodialysis shows no significant difference across the number of years in service.

This means that nurses, regardless of their number of years in service, follow the same practices for preventing nosocomial infection before, during, and after hemodialysis.

Meanwhile, significant differences exist after hemodialysis. This means that the number of years of service affects nurses' practices in preventing nosocomial infection after hemodialysis. Table 13 shows the results of the Scheffe test on this aspect.

Table 13 displays the significant difference in the practices of nurses in preventing nosocomial infection among hemodialysis patients across several years of service in the hemodialysis center.

Table 13
Scheffe Test Results on the Significant Difference in the Practices of Nurses in Preventing Nosocomial Infection among Patients across Number of Years in Service in the Hemodialysis Center

Aspect	Compared Groups	Mean Difference	Sig
After Hemodialysis	Below 1 vs 1-2	-.174	.027
	Below 1 vs 3-4	-.201	.011

The significant negative mean difference reveals that the nurses with greater length of service have better practices in preventing nosocomial infection after hemodialysis. It revealed that the longer the nurses have been in service, the more they

have mastered the prevention of nosocomial infection for patients undergoing hemodialysis.

Table 14 presents the difference in nurses' practices in preventing nosocomial infection among hemodialysis patients across a number of relevant trainings.

Table 14
ANOVA Results on the Difference in the Practices of Nurses in Preventing Nosocomial Infection among Patients across Number of Relevant Trainings on Hemodialysis for the Past Two Years

Aspect	Source of Variation	Sum of Squares	df	Mean Squares	F-value	Sig	Remarks
Before Hemodialysis	Between Groups	.191	3	.064	1.657	.184	Not Significant
	Within Groups	2.728	71	.038			
	Total	2.919	74				
During Hemodialysis	Between Groups	.011	3	.004	.164	.921	Not Significant
	Within Groups	1.636	71	.023			
	Total	1.647	74				
After Hemodialysis	Between Groups	.064	3	.021	.762	.519	Not Significant
	Within Groups	1.988	71	.028			
	Total	2.051	74				

The computed F-values have significance values higher than the set .05 significance level. Hence, no significant difference exists.

The number of relevant nursing training sessions does not affect their practices in preventing nosocomial infection before, during, and after hemodialysis. The study revealed that the nurses performed comparable performances in preventing nosocomial infection regardless of the number of training sessions.

Table 15 displays the difference in nurses' practices in preventing nosocomial infection among hemodialysis patients across categories of health facilities.

Table 15
t-Test Results on the Difference in the Practices of Nurses in Preventing Nosocomial Infection among Hemodialysis Patients across Health Facility

Aspect	Category	n	Mean	Mean Difference	Standard Error Difference	Df	t-value	Sig	Remarks
Before Hemodialysis	Private	47	4.89	-.036	.048	73	-.749	.456	Not Significant
	Public	28	4.93						
During Hemodialysis	Private	47	4.95	-.007	.036	73	-.189	.851	Not Significant
	Public	28	4.95						
After Hemodialysis	Private	47	4.90	-.072	.039	73	-1.843	.069	Not Significant
	Public	28	4.97						

The computed t-values provided significance values higher than the set .05 level of significance; hence, the results are not significant. The type of health facility that the nurses are affiliated with does not affect their practices in preventing nosocomial infections among hemodialysis patients.
It revealed that the nurses in any health care facility category render comparable practices in preventing nosocomial infection.

Part IV. Relationship Between the Practices of Nurses in Preventing Nosocomial Infection among Hemodialysis Patients and their Profile Variables

Table 16 displays the relationship between the practices of nurses in preventing nosocomial infection among hemodialysis patients and their profile variables.

Significant positive R-values are evident between practices and highest educational attainment.

Nurses are given the chance to be with a significant other and engage in good practices in preventing nosocomial infection before, during, and after hemodialysis.

Table 16
Relationship Between the Practices of Nurses in Preventing Nosocomial Infection among Hemodialysis Patients and their Profile Variables

	Before Hemodialysis		During Hemodialysis		After Hemodialysis	
Profile Variable	**r-value**	**sig**	**r-value**	**sig**	**r-value**	**sig**
Age	-.026	.823	-.147	.208	-.061	.603
Sex	-.109	.351	-.049	.675	-.033	.776
Civil Status	.243*	.035	.247*	.032	.300*	.009
Highest Educational Attainment	-.453*	.000	-.652*	.000	-.432*	.000
Number of Years in Service in Hemodialysis Center	-.095	.417	.105	.370	.056	.631
Number of Relevant Trainings	-.074	.530	.038	.749	-.022	.848
Health Facility	.087	.456	.022	.851	.211	.069

***Significant at .05 level**

On the other hand, significant negative R-values are evident between practices and the highest educational attainment, indicating an inverse relationship. The lower the level of educational attainment of the nurses, the more they practice the proper prevention of nosocomial infection before and after hemodialysis, implying that even those with a bachelor's degree should practice the correct methods to prevent nosocomial infection. No other significant relationship is established between the practices of nurses and other profile variables.

PROPOSED ENHANCEMENT PROGRAM AMONG NURSES

General objectives: To enhance the nurses' practices in preventing nosocomial infections among hemodialysis patients.

A. Intensify the monitoring of vaccinations received by patients undergoing hemodialysis. Therefore, prior to the procedure, the HD staff will conduct pre-dialysis orientation among watchers or patients. They will be provided with brochures on instructions prior to hemodialysis, and instructions will be specified.
B. The proper use of personal protective equipment before the procedure must be strictly implemented. Each patient or watcher entering the hemodialysis unit must wear personal protective equipment and work with the hemodialysis team.
C. Improve support services for patients. Hemodialysis patients must be assisted throughout the procedure for them to be cooperative and gain confidence.
D. Enhancing the quality-of-care services the treatment team provides, upgrading the facilities and equipment. The HD team must report properly to management to have regular maintenance and procure updated HD equipment.
E. Adoption of an interdisciplinary approach to improve the care services among in-patients receiving hemodialysis treatment. Proper coordination with the staff nurses when the patient is admitted to the hospital is necessary to avoid delays or unpreparedness before the procedure.
F. Interventions to promote employees' health and well-being must be included in the planning of activities of the hospital.
G. Educational interventions to develop healthy behaviors in hemodialysis patients to help patients adapt to disease, treatment, and behavioral changes. Health education is organized for family members so that they will understand the nature of their patient's condition.
H. Development of a training program for hemodialysis nurses

Certificate in Hemodialysis Program
- theoretical Phase
- clinical Phase

Continuing Education program in hemodialysis
Advanced training in Dialysis

Proposed Training program for Hemodialysis Nurses in Evidence-Based Exploration of infection prevention practices.

General Objectives: To further enhance Hemodialysis Nurses for evidence-based exploration of infection prevention practices.

TYPE OF TRAINING	OBJECTIVES	TIMETABLE
Safe Access Healthy Outcomes Hemodialysis Infection Control	To determine the different ways of hemodialysis infection control.	July 2024
Safe Needles Healthy Lives Hemodialysis Infection Practices	To enhance the safe needle practices of nurses among hemodialysis patients	September 2024
Infection Warriors Hemodialysis Nurse Preparedness	To ensure the preparedness of nurses to prevent infection among hemodialysis patients.	November 2024
Clean Hands Safe Care Hemodialysis Infection Control	To teach the importance of hand hygiene in the care of hemodialysis patients.	January 2025

Proposed Training Program for Hemodialysis Nurses in Infection and Prevention

General Objectives: To further enhance Hemodialysis Nurse's for exploring infection prevention practices.

Training to enhance the nurses in infection control among hemodialysis patients.

Dialysis Shield Strengthening Infection Control Measures	To introduce other measures of strengthening infection control.	May 2025

Conclusions

This chapter presents the conclusions and recommendations based on the study's findings.

Based on the study's findings, the following are now concluded.

1. The nurse respondents were young adults, female-dominated, with a bachelor's
   degree. They had been in the dialysis center for 3-4 years, attended a few seminars, and were employed in private dialysis centers.
   The nurses interviewed were adults, males, and females, mostly holders of Bachelor's degrees, who have been in the service for more years and work equally in public and private HD centers.
2. The extent of nurses' practices in the prevention of nosocomial infection among
   hemodialysis patients is highest during hemodialysis, followed by after hemodialysis, and lowest before dialysis.
   The nurses interviewed corroborated with the practices done by those in the quantitative aspect.
3. Married nurses significantly practice more effectively in preventing nosocomial infection than single nurses. The number of years of service also affects nurses' practices in preventing nosocomial infection after hemodialysis.
4. The lower the nurses' highest educational attainment, the more they practice the
   proper prevention of nosocomial infection before, during, and after hemodialysis, implying that even those with Bachelor's degrees should practice the correct way to prevent nosocomial infection.
5. The proposed intervention program is prepared to enhance the prevention practices
   of nosocomial infection.

Recommendations

Based on the conclusions formulated, the following are at this moment offered:

1. in the quantitative aspect, both nurse respondents must continue to pursue a higher
   level of learning and attend relevant hemodialysis seminars.
2. To improve their prevention practices, The respondents must enhance their prevention practices, particularly before and after hemodialysis.

3. Regardless of their profile variables, the nurses must improve their prevention practices in all three periods of hemodialysis.
4. Young nurses and other nurses must continue their prevention practices for nosocomial infection to benefit those hemodialysis patients.
5. The proposed intervention program can be adapted for implementation.

Compliance with Ethical Standards

The researcher diligently ensured adherence to ethical precautions and procedures throughout the study. These included:

Respect for Patient Autonomy

It involves obtaining informed consent from participants or their legal representatives, ensuring comprehension of the research purpose, risks, and benefits, and respecting participants' right to refuse or withdraw from the study without repercussions.

Confidentiality and Privacy

Includes protecting the confidentiality of participant information, utilizing secure data storage and transmission methods, and ensuring that research data is accessible only to authorized personnel.

Beneficence and non-maleficence

Includes implementing appropriate measures to protect participants from physical or psychological harm, providing necessary support services, and promptly addressing any adverse events or concerns.

Transparency and Disclosure

Includes communicating the study's purpose, objectives, and methodology to participants, disclosing any potential conflicts of interest, and providing accurate information about using and disseminating research findings.

Fair Treatment and Equity

Includes avoiding discrimination or bias in participant selection, accommodating diverse needs and backgrounds, and fostering an inclusive research environment.

Professional Integrity

Includes maintaining honesty and accuracy in data collection and reporting, avoiding fabrication or falsification of results, and acknowledging any limitations or biases in the research findings.

Accountability and Oversight

This will involve regularly monitoring and auditing research protocols, reporting ethical concerns or violations, and cooperating with investigations or inquiries.

Participant Advocacy

Includes addressing participant concerns or grievances, ensuring access to necessary resources or support services, and promoting a culture of respect and dignity in research settings.

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EXAMINING THE LEVELS OF AWARENESS AND ACCEPTANCE OF GENERATIVE ARTIFICIAL INTELLIGENCE TO SUPPLEMENT PROBLEM-SOLVING ANALYSIS IN AN AEROSPACE COMPANY

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ABSTRACT

In the chosen aerospace manufacturing company, engineers have a problem in efficiently identifying root causes and determining effective corrective actions. The absence of immediate yet informative insights contribute to this problem. This research examined the levels of awareness and acceptance of Generative Artificial Intelligence (AI) in problem-solving analysis. With the identified awareness and acceptance levels, measures were identified to effectively use Generative AI to supplement problem-solving analysis. This research used Davis' Technology Acceptance Model (TAM) to identify factors influencing the effective implementation and usage of new technologies such as Generative AI. A descriptive research design, using quantitative method, was used to support the objectives of the research. Data were gathered through survey questionnaire and was analyzed through comparison of means. This research has revealed that the engineers of the chosen aerospace manufacturing company have a high level of awareness regarding Generative AI. Additionally, it also revealed a high level of acceptance among engineers of the chosen aerospace company of Generative AI in supplementing their problem-solving. These levels of awareness and acceptance have helped in the identification of effective measures for utilizing Generative AI in problem-solving analysis. These measures include establishing a framework, establishing a review process, cultivating a proficient workforce, and developing and pursuing other potential uses of Generative AI.

Keywords: *Generative AI, Problem-Solving Analysis, Aerospace Manufacturing Companies*

INTRODUCTION

Nature and Scope of the Problem Investigated

Today's manufacturing companies operate in a highly complex and dynamic environment. This requires engineers to be knowledgeable on a wide range of topics in order to solve problems. While the 8D and 3C problem solving methodologies can provide a structured process in problem-solving analysis, engineers still encounter difficulties. A problem observed on the chosen aerospace manufacturing company is the lack of immediate but informative insights that lead to inefficient and ineffective problem-solving analysis. Moreover, time constraints and resource limitations can impede the thorough execution of the problem-solving methodologies potentially leading to ineffective corrective actions.

Currently, Generative Artificial Intelligence (AI) models such as ChatGPT are establishing themselves as new and innovative technology. It can provide information, answer questions, and engage in discussions on a wide range of subjects, even on the topics and tools related to manufacturing, quality management systems, and problem-solving analysis. Although Generative AI can be advantageous in modern-day manufacturing, it is important to thoroughly evaluate its application and consider how it is accepted by engineers in the chosen aerospace manufacturing company.

Review of Pertinent Literature

According to studies by Cahyo et al. (2020) and Elangovan et al. (2020), effective problem-solving analysis is crucial for reducing defects and waste in production and improving customer satisfaction. However, while problem-solving methodologies have been successful in various industries, challenges such as lack of expertise, employee bias, and miscommunication exist (Bokrantz et al., 2020). Incorporating emerging technologies like Generative AI, which offers human-like responses, can improve problem-solving analysis through its decision-making capabilities according to a report by Northwest (2023).

Manufacturing organizations benefit from the use and application of Generative AI. In an article published by Casidsid et al. (2023), Generative AI can be used in document management, logistics optimization, preventive maintenance, and compliance identification in manufacturing

Generative AI, such as ChatGPT, provides user with human-like responses drawn from statistical patterns of language in vast datasets on the internet. As Generative AI and ChatGPT continues to evolve and improve, impressive results in the years to come are expected (Kalla & Smith, 2023). Various sectors, including manufacturing, are now exploring the use of ChatGPT.

Wilson (2023) provided a step-by-step method on how to use ChatGPT in problem-solving analysis.

1. Identify the problem to be solved using Chat-GPT. Be specific as possible and provide relevant details that will help ChatGPT understand the problem.
2. Review the response from ChatGPT. Ensure that it addresses the problem. If the response does not fully address the problem, generate again a response from ChatGPT.
3. Follow-up questions.
4. Seek additional resources.

While it is beneficial, the applications of ChatGPT are met with mixed reaction from different sectors. Furthermore, as reported by the United States Nuclear Regulatory Commission (US NRC), understanding Generative AI requires consideration on safety, control, and security.

Although it's met with cautious optimism in healthcare and varied performance in education and research, supply chain and manufacturing industries show enthusiasm for its benefits such as logistics optimization and workforce training (Gabashvili, 2023). However, concerns about AI's impact on employment and society requires a strategic approach to its implementation (Gabashvili, 2023). Overall, the use of Generative AI in problem-solving analysis holds promise for improving efficiency.

Research Framework

The research input focused on the awareness and acceptance levels of engineers of the chosen aerospace manufacturing company in using Generative AI in supplementing their problem-solving analysis. These were further supported by the perceived usefulness and perceived ease of use of Generative AI in problem-solving analysis. These data were gathered via a survey questionnaire based on Davis's Technology Acceptance Model (TAM). These data were vital in determining the measures that will guide the chosen aerospace manufacturing company to effectively supplement problem-solving analysis with Generative AI. Based on the results and gathered literatures, this research came up with measures and strategies to effectively use Generative AI in problem-solving analysis.

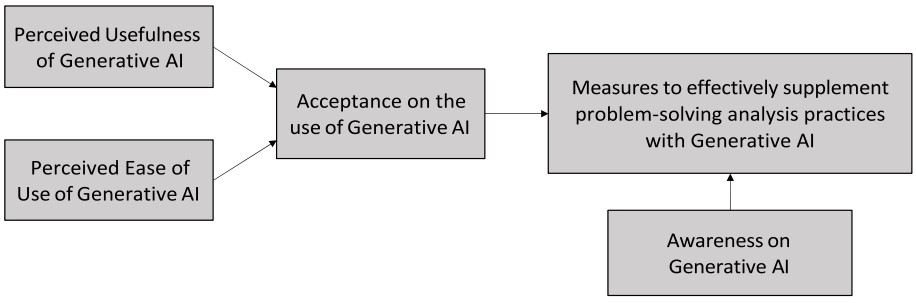


Figure 1. Conceptual Framework

Research Questions

This research determined and provided answers to the following research problems and objectives:

1. The awareness level of engineers of the chosen aerospace manufacturing company on Generative AI;
2. The acceptance level of engineers of the chosen aerospace manufacturing company on Generative AI; and
3. The measures that can be recommended to the chosen aerospace manufacturing company to effectively use Generative AI in supplementing their problem-solving analysis.

METHODOLOGY

Research Design

This research used a quantitative research design which supported the defined objectives. The primary data were composed of the engineers' awareness, perceived usefulness, perceived ease of use, and acceptance on the use of Generative AI in problem-solving analysis. These data were collected to aid in identifying the measures needed to effectively use Generative AI in problem-solving analysis.

Research Locale

The research was conducted on the chosen aerospace manufacturing company in the Philippines. The participants held engineering positions and came from different departments, including quality, manufacturing/ process, and design engineering. These departments are actively involved in conducting problem-solving analysis.

Population and Sampling Design

The respondents were of legal working age and currently employed in the chosen manufacturing company in the Philippines. The chosen departments participated on this research are those with experience and knowledge in resolving manufacturing issues through problem-solving analysis. The sample size was identified using quota sampling and approval from the chosen aerospace manufacturing company's human resources department were sought. 30 engineers from design, manufacturing, and quality were identified for this research.

Research Instruments

Quantitative research design was used for this research. A standardized instrument, via a survey questionnaire, was used to collect the primary data. The survey was into 2 parts, engineers' awareness on Generative AI and acceptance, which also factors the perceived usefulness, perceived ease of use, and attitude, towards use of Generative AI in problem-

solving analysis. The validated set of questions were constructed based on Davis' Technology Acceptance Model (TAM) Framework and the research's conceptual framework.

Data Gathering Procedure

The primary data used on this research were collected via a survey questionnaire. The data gathering process was performed with the company's consent and approval. The survey included questions gauging the awareness and acceptance level in using Generative AI in supplementing problem-solving analysis through 5-point Likert scale (5 being the highest and 1 being the lowest).

Management and Treatment of Data

To analyze the data obtained from the survey, descriptive statistics were employed. This statistical method helped produce a comprehensive summarization of the survey responses, aiding in the identification of awareness and acceptance levels among the engineers of the chosen aerospace manufacturing company. Specifically, the comparison of means was used to delve deeper into the data.

RESULTS AND DISCUSSION

Awareness on AI and Generative AI

Based on the collected data shown in Table 1, the design engineering department expressed a high level of awareness of 3.60 on Generative AI. Meanwhile, the quality engineering department also expressed a high level of awareness of 4.10 on Generative AI. Lastly, the manufacturing department exhibited a high level of awareness of 3.80. With an overall awareness level of 3.83, the chosen aerospace manufacturing company have a high level of awareness on Generative AI. This collective awareness is indicative of a good foundation for potential integration and use of Generative AI in the chosen aerospace manufacturing company.

Table 1. Awareness Level of Different Departments on Generative AI

Department	Awareness Level (Mean)	Verbal Interpretation
Design	3.60	High level
Manufacturing	3.80	High level
Quality	4.10	High level
Overall Rating	**3.83**	**High level**

Acceptance of use of Generative AI to supplement Problem-solving Analysis

Table 2 presented the perceived usefulness, ease of use, attitude, and acceptance towards use Generative AI in problem-solving analysis.

Table 2. Overall Perceived Usefulness, Perceived Ease of Use, and Perceived Attitude towards use of Generative AI in problem-solving analysis

	Overall Rating (Mean)	Verbal Interpretation
Level of Perceived Usefulness (Root Cause Analysis)	3.80	High level of perceived usefulness of Generative AI in improving the accuracy of finding the root cause.
Level of Perceived Usefulness (Corrective Action)	3.87	High level of perceived usefulness of Generative AI in the effective identification of corrective action/s.
Level of Perceived Usefulness (Overall Problem-solving Analysis)	3.83	High level of Perceived Usefulness of Generative AI in overall problem-solving analysis
Level of Perceived Ease of Use (Learning Generative AI)	3.83	High level of perceived ease of learning to use Generative AI
Level of Perceived Ease of Use (Learning Curve)	3.67	High level of perceived significant learning curve in using Generative AI in problem-solving analysis
Level of Perceived Ease of Use (Becoming Proficient)	3.83	High level of perceived ease of becoming proficient in using Generative AI in problem-solving analysis
Level of Attitude Towards Use of Generative AI (As a Positive Experience)	4.13	High level of attitude towards the use of Generative AI in problem-solving analysis as positive experience
Level of Attitude Towards Use of Generative AI (As Beneficial)	3.83	High level of attitude towards the use of Generative AI as a beneficial tool in problem-solving analysis
Level of Acceptance	3.93	High level of acceptance in using Generative AI to supplement problem-solving analysis

Across the board, Generative AI was highly regarded for its perceived usefulness in improving problem-solving analysis (mean rating of 3.83). Specifically, it is seen as particularly valuable in root cause analysis (mean rating of 3.80) and in the effective identification of corrective actions (mean rating of 3.87). This perception can be traced back from the Generative AI's capacity to analyze complex datasets, identify patterns, and generate insights that can contribute to a more accurate understanding of provided issues (Kalla & Smith, 2023).

While Generative AI is perceived useful, it was acknowledged that there is a high level of learning curve in using it in problem-solving analysis (mean rating of 3.67). Despite this, engineers expressed a high level of perceived ease of learning Generative AI in problem-solving analysis (mean rating of 3.83) and a high level of perceived ease of becoming proficient in using Generative AI in problem-solving analysis (mean rating of 3.83). This data emphasized that proficiency in the use of Generative AI in problem-solving analysis is easy and attainable.

The data also reflected a high level of attitude towards the use of Generative AI in problem-solving analysis as positive experience (mean rating of 4.13) and as a beneficial tool in problem-solving analysis (mean rating of 3.83). This collective mindset signifies the engineers' recognition of Generative AI as a beneficial tool for effectively addressing and analyzing problems within the chosen aerospace manufacturing company

Ultimately, the collected data emphasized an inclination and acceptance to adopt Generative AI in problem-solving analysis (mean rating of 3.93). It further recognized the collective perception of engineers of the chosen aerospace manufacturing company based on its usefulness, ease of use, and overall attitude towards its integration into problem-solving processes.

Measures to effectively supplement problem-solving analysis practices with Generative AI

Establishing effective measures to effectively use Generative AI in problem-solving analysis is important and it can be affected by engineers' awareness and acceptance. Drawing from research findings and existing literature, the study outlined the four key measures illustrated in Figure 2. The first goal focused on establishing an organizational framework for Generative AI usage, aligning with recommendations from the US NRC and Wilson (2023) to ensure seamless integration. The framework, shown in Figure 3, can guide engineers on the process of problem identification. The second goal emphasized the need for a review process while using Generative AI. The third goal highlighted the importance of cultivating a proficient workforce through trainings. Lastly, the fourth goal highlighted the need for organizations to explore and leverage the full potential of Generative AI across various applications, fostering a culture of innovation and continuous improvement within the chosen aerospace manufacturing company.

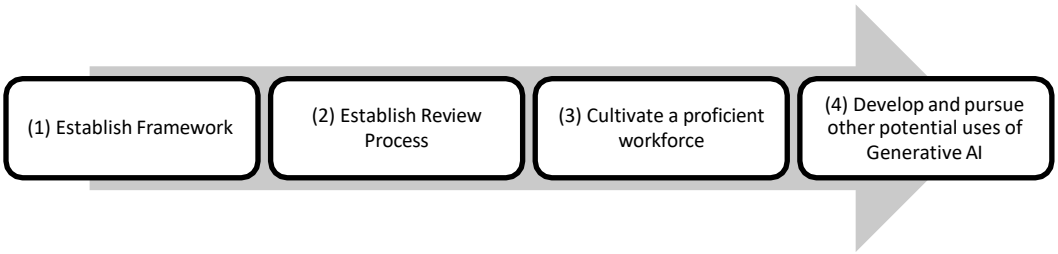


Figure 2. Measures in Implementing Generative AI into the Workforce

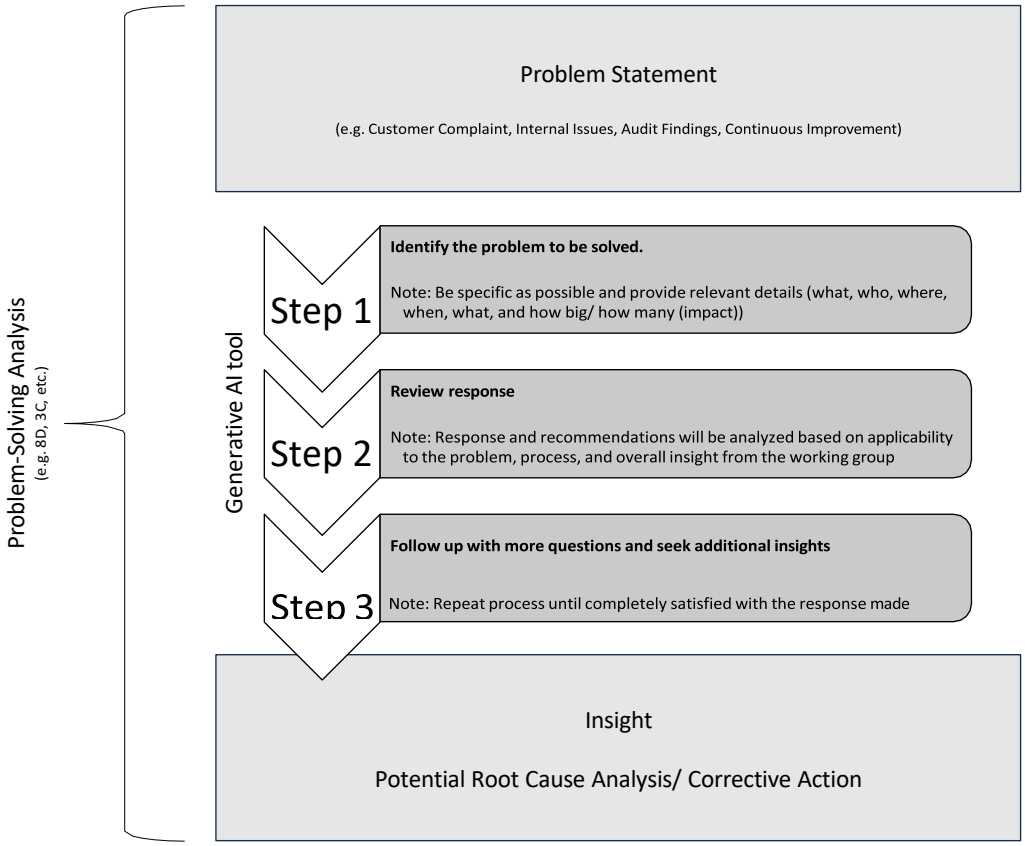


Figure 3. Framework - Use of Generative AI to Supplement Problem Solving Analysis

Summary of Findings

The awareness level of engineers (30 from design, manufacturing, and quality department) on Generative AI yielded 3.83. This conveyed a message that the engineers have a high level of awareness on Generative AI. Furthermore, the acceptance level of engineers in using Generative AI yielded 3.93. This conveyed a message that the engineers accept the use of Generative AI to supplement their problem-solving analysis. These are further supported by their general and positive response on perceived usefulness, perceived ease of use, and attitude towards use of Generative AI to supplement their problem-solving analysis. Lastly, the measures to ensure effective implementation includes formulating a strategic plan that includes establishing a framework, establishing a review process, cultivating proficient workforce, and developing and pursuing other applications of Generative AI in the organization.

Conclusions

It was concluded that the engineers of the chosen aerospace manufacturing company have high level of awareness on Generative AI. This collective awareness on Generative AI is indicative of a good foundation for potential integration and use of Generative AI in the chosen aerospace manufacturing company. Additionally, engineers accept the use of Generative AI in supplementing the problem-solving analysis of the chosen aerospace manufacturing company. Although new and might pose some challenges, engineers are in favor of using Generative AI to supplement problem-solving analysis. This acceptance is indicative of openness among engineers to adapt the measures to be provided to ensure effective use of Generative AI in supplementing the problem-solving analysis of the chosen aerospace manufacturing company. Furthermore, the identified measures are vital in improving problem-solving analysis with Generative AI. This includes establishing a framework suitable to the autonomy level of Generative AI in problem-solving analysis. This will also serve as guidance in using Generative AI as a supplementary tool in problem-solving analysis. This may also be supported by establishing a review process to ensure effectiveness of the process. This plan also highlighted the need for a training program that will help cultivate a proficient workforce. Lastly, as part of continuous improvement, pursue other potential applications of Generative AI.

Recommendations

This research determined the opportunities for future, similar, or related research such as the study of Generative AI and problem-solving analysis. Future study can also be done not just in the chosen aerospace manufacturing company but also in other companies outside Philippines. Similar studies may also be conducted outside the aerospace industry such as automotive, medical, and other industry that uses problem-solving

analysis. This will yield participation of more employees in the survey and will even result in a more remarkable result.

The study could still be improved by including more engineers and employees who are familiar with problem-solving analysis, methodologies, and practices. Moreover, future researchers can use other types of research methods, such as qualitative or mixed methods, to improve the study.

Compliance with Ethical Standards

As part of the data collection process, the following ethical considerations were observed to ensure confidentiality and integrity.

Voluntary participation. Respondents participated on the survey with their full consent and were not forced. The brief purpose of the research and survey were explained to them through an introductory letter. Respondents have the right to withdraw from any participation on this research at any time if they wish to do so.

Confidentiality. The data collection process strictly followed Republic Act No. 10173, otherwise known as the Data Privacy Act, to protect all forms of information, be it private, personal, or sensitive, provided by the respondents.

Potential for Harm. Respondents were assured that they will not be subjected to any kind of harm, may it be physical, psychological, or emotional. The survey focused only on the aspects of research questions and objectives, and they were protected from any uncomfortable questions.

Communication. The objectives of this research were communicated in a clear and concise manner prior the respondents partaking in the survey. All communications, including inquiries and clarifications, are documented.

Data findings, discussion, and analysis. Primary data findings from the survey were used as intended. Objectivity in discussions and analyses were observed throughout the research that ensured no misleading information and biased representation were drawn from this research.

Acknowledgement of works. The works and citations by other authors referenced in this research were acknowledged following APA format.

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EXPERIENCES, CHALLENGES, AND COPING MECHANISM IN PORTFOLIO COMPLETION ON RESULT-BASED PERFORMANCE MANAGEMENT SYSTEM OF ELEMENTARY SCHOOL TEACHERS OF LAMBAYONG DISTRICT III

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ABSTRACT

This study explores the experiences, challenges, and coping mechanisms in portfolio completion on the result-based performance management system of elementary school teachers in Lambayong District III for the school year 2023-2024 among eight teachers in Lambayong District III. It employed a phenomenological study using thematic analysis in processing the responses of the participants. On the struggles they have encountered in the preparation of means of verification of their performance, the following themes were generated; Documents Archiving, and Time and Resources Constraints. On the teachers coping with the challenges they have faced in the preparation of means of verification for their performance the following themes were generated based on the responses of the participants, Technical Assistance, Collaboration, and Feedbacking. Lastly, On the possible school policies or programs to be implemented based on your struggles and experiences in compiling the means of verification. The theme that was generated from the responses of the study was, Strengthening Midyear Performance Review and Evaluation.

Keywords: *Experiences, Challenges, Coping Mechanism, Individual Performance Commitment and Review Form, Bottleneck, Lambayong, Philippines*

INTRODUCTION

Teachers play a crucial role in improving the quality of the teaching and learning process. Good teachers are vital to raising student achievement. Hence, enhancing teacher quality ranks foremost in many educational reform efforts toward quality education.

To complement reform initiatives on teacher quality, the Philippine Professional Standards for Teachers (PPST) has been developed and nationally validated. This was signed into policy by Department of Education (DepEd) Secretary Maria Leonor Briones through DepEd Order No. 42, s. 2017. The PPST articulates what constitutes teacher quality through well-defined domains, strands and indicators that provide measures of professional learning, competent practice and effective engagement across teachers' career stages. This document serves as a public statement of professional accountability that can help teachers reflect on and assess their own practices as they aspire for personal growth and professional development. In 2015, the DepEd issued Order No.2, s. 2015 — "Guidelines on the Establishment and Implementation of the Results-based Performance Management System (RPMS) in the Department of Education" following Civil Service Commission Memorandum Circular No. 06, s. 2012 or the Strategic Performance Management System (SPMS) to ensure efficient, timely, and quality performance among personnel. The guidelines explain the mechanism, criteria, and process for performance target setting, monitoring, evaluation, and development planning. Through the RPMS, the DepEd ensures that work efforts focus on achieving its vision, mission, values, and strategic priorities toward the delivery of quality educational services to Filipino learners.

Further, there is negative feedback from teachers in the field posted on social media about the preparation of the means of verifications in the different observable objectives for them to have a very satisfactory or even outstanding performance. There are reported number of teachers that because of the classroom observation and different materials needed for the performance of the teachers were the causes of their suicidal acts, some teachers appeal to the department to stop the new performance indicators for teachers because it can be also biased to some other teachers who hardly work to have a high rating, that is why this study was formulated.

Furthermore, this study conducted not to expose the negative impact of this new performance on teachers but to try to create a theme on issues about the challenges faced by elementary school teachers in Lambayong III.

Research Questions

Relative to the preponderance of existing empirical studies about teacher performance, this study aims to answer the following research questions;

1. What are the struggles they have encountered in the preparation of means of verification of their performance?
2. How do teachers cope with the challenges they have faced in the preparation of means of verification for their individual performance?
3. What are the possible school policies or programs to be implemented based on the result of the study?

METHODOLOGY

The study use qualitative research in particular phenomenology research design will be used, which is a research approach that allows the researcher to interpret the life of people to understand their problems better and deeper to generate solutions that are relevant to their situations, Wa-Ambaleka (2018).

The respondents of the study will be eight (8) elementary teachers in Lambayong District III for the school year 2023-2024 with following inclusion criteria, a. teachers must be permanent or regular, b. must be at least 3 to five years in the teaching in public schools, c. oriented with the Result Based-Performance Management System, and d. with at least very satisfactory performance for the last 3 school years. Thematic analysis was use to process the responses of the participants of the study.

RESULTS

On the struggles they have encountered in the preparation of means of verification of their performance. The following themes were generated, **Documents Archiving, and Time and Resources Constraints.**

On the teachers coping with the challenges they have faced in the preparation of means of verification for their performance. In this case, the following themes were generated based on the responses of the participants, **Technical Assistance, Collaboration, and Feedbacking.**

On the possible school policies or programs to be implemented based on your struggles and experiences in compiling the means of verification. The theme that was generated from the responses of the study was, **Strengthening Midyear Performance Review and Evaluation.**

DISCUSSION

On the struggles they have encountered in the preparation of means of verification of their performance

There are means of verification needed in every domain and indicator that the teachers need to provide to get the maximum points in every indicator. In preparing those means of verification, the teachers faced struggles they encountered.

With this matter, the following themes were generated; **Documents Archiving, and Time and Resources Constraints.**

The first theme was Documents Archiving, *Document archiving* will keep your documents in a secure, safe, and clean location. The documents will be easily accessible. The participants shared their thoughts;

> *"The preparation of means of verification is really difficult. Some struggles that I am facing here are how to start the process of making RPMS/IPCRF because there are times that I lack resources, and also I do not have access to previous data and it is difficult to collect documents for means of verification." Participant 6,* **5 years in the service, and Female***;*

> *"Preparing means of verification requires time and effort which can be challenging for educators/teachers who already have a heavy workload. My struggle to find the time to gather evidence, document achievements, and reflect on their performance."* ***Participant 8, 10 years in the service, Male, and***

The second theme that was generated was **Time and Resources Constraints.**

Resource-constrained scheduling deals with scenarios where resources are limited and lets you devise ways to ensure you complete tasks on *time. The participants shared their feelings on this matter;*

> *"In the preparation of my means of verification for teachers' performance, challenges may arise from resistance to change; time and financial constraints."* ***Participant 7, 19 years in the service, and Female;***

> *"In the context of result-based- performance management system, there have been various challenges that I encountered such as; documentation burden, clarity of criteria, technology challenges, and time constrain."* ***Participant 5, 6 years in the service, and Female;***

> *"Time and resources constraints- preparing my means of verification can be time-consuming and require additional resources, such as materials,*

tools, and requirements. Teachers and school officials may struggle to the time and resources needed to collect and organize evidence of their performance." ***Participant 3, 23 years in the service, and Male;***

"The challenges in preparing my means of verification for RPMS/IPCRF often revolve around gathering accurate and relevant evidence to support performance. Educators face difficulties in obtaining data and aligning evidence with established criteria. It includes also time constraints and resource limitations." ***Participant 2, 6 years in the service, Female***

The lines of the participants are somewhat anchored in, the transactional theory of Lazarus, et al., (2001) served as the underpinning of this investigation. The transactional theory suggests that stress is the direct product of a transaction between an individual and their environment which may tax their resources and thus threaten their wellbeing. A more recent version of this theoretical model suggests that it is the appraisal of this transaction that offers a causal pathway that may better express the nature of the underlying psychological and physiological mechanisms that underpin the overall process and experience of stress.

On the teachers coping with the challenges they have faced in the preparation of means of verification for their performance

Coping mechanisms are the *strategies people often use in the face of stress and/or trauma to help manage painful or* difficult emotions.

In this case, the following themes were generated based on the responses of the participants, **Technical Assistance, Collaboration, and Feedbacking.**

The first theme was Technical Assistance, as the participants shared their coping mechanisms with this matter such as;

"To enhance my documentation skills and effectively manage my workload, I am determined to seek out professional development opportunities and engage in open communication with my peers to exchange ideas. By establishing a disciplined routine, I am confident that I can increase my productivity and achieve greater success in my work." ***Participant 7, 19 years in the service, Female;***

"By maintaining a positive mindset, actively seeking assistance, and acknowledging the importance of documenting your progress, you can enhance your professional growth and ensure a resilient and prosperous journey." ***Participant 5, 6 years in the service, Female***

The second theme that was generated was **Collaboration and feedback.**

Collaborative ways of working helped most teachers feel better about themselves and their work, and provided them with opportunities to learn from each other.

> *"To alleviate my difficulties in documenting my performance for evaluations, may I suggest promoting collaboration, providing feedback, and fostering innovation. These proactive steps have the potential to reduce the burden of documentation and enhance its accuracy."* ***Participant 6 33, 5 years in the service, and Female;***
>
> *"Collaborate with fellow peers to share and exchange ideas. To have a common language and understanding of the means of verification to be attached."* ***Participant 8, 10 years in the service, and Male***
>
> *"Indeed, the process of preparing MOVs necessitates working together with colleagues to guarantee their precision and comprehensiveness."* ***Participant 6 33, 5 years in the service, and Female;***
>
> *"Sure, of course! Working together, whether they are other teachers or helpful staff members, allows us to share ideas, assign responsibilities, and provide insightful criticism on the proof and methods of verification we are putting together."* ***Participant 5, 6 years in the service, and Female,*** *and*
>
> "Preparing to verify requires effective planning, self-care, collaboration, and a positive mindset to overcome challenges." **Participant 4, 16 years in the service, Female**

Based on the result of the study is parallel to the DepEd Manual of 2016 defines technical assistance (TA) as any form of professional help, guidance, or support aimed at elevating teachers' performance. It is an active, procedural process that makes use of tools via process consultation and focuses on achieving set goals. Moreover, the delivery of TA can take in varied forms. It could be in the form of information sharing, capability building, and group work management. Within the information area, sharing our policies, guidelines, directions, and instructions of the top DepEd management. Capability building refers to the development of competencies or knowledge, skills, and attitudes. In group and work management, the TA provider helps the clients in accomplishing outputs or targets based on their work plan.

On the possible school policies or programs to be implemented based on your struggles and experiences in compiling the means of verification

Coping is defined as the thoughts and behaviors mobilized to manage internal and external stressful situations, (Folkman, 2004). It is a term used distinctively for conscious and voluntary mobilization of acts, different from 'defense mechanisms' that are subconscious or unconscious adaptive responses, both of which aim to reduce or tolerate stress.

The theme that was generated from the responses of the study was, **Strengthening Midyear Performance Review and Evaluation.**

School heads need to provide forms of technical assistance to the teachers, to ensure that necessary resources, such as teaching materials or technology, are made available to support teachers' improvement efforts.

With this teacher participants shared their story on this matter such as;

> *"Regularly evaluate RPMS policies and programs. Check how well RPMS is working. Make changes as needed based on feedback from teachers and others involved."* ***Participant 8, 10 years in the service, Male***
>
> *"Continuously offer support through mentorship programs and helpful resources to ensure that teachers can successfully navigate the RPMS process and follow the RPMS cycle during the midyear performance review."* ***Participant 6, 5 years in the service, Female,***
>
> *"Organize peer-sharing sessions and collaborative planning meetings where educators can exchange successful strategies, practices, and resources related to the implementation of RPMS during the midyear performance and review to prepare all the needed documents or means of verification on the compilation of the portfolio."* ***Participant 3, 23 years in the service, Male***
>
> *"Develop extensive training programs for educators on the Results-Based Performance Management System process, including explicit instructions and practical workshops. It can be during the school learning action cell or during the midyear performance review and evaluation."* ***Participant 1, 5 years in service, Male***

Meanwhile, the issues and concerns encountered by the teachers, as assessed by school heads and teachers, are high as to work performance. Thus, the proposed in-house feedback session aims to improve teachers' performance through the provision of technical assistance. School heads and teachers may participate in seminars and training sessions offered by Department of Education (DepEd) officials in conjunction with teachers to improve their comprehension of the IPCRF.

Lastly, Performance appraisal, which is known as employee appraisal, performance tracking, performance estimation, or performance estimation is a broadly applicable term in Human Resource Management and in most business spheres Performance Appraisal is a procedure of obtaining, analysing, recording employee information in work environment and reporting the results to those who are interested in it (Ntamamilo, 2013)

Conclusions

The following conclusions are drawn based on the findings of the study.

The following themes were generated; Documents Archiving, and Time and Resources Constraints on the challenges they faced. Generated based on the responses of the participants, Technical Assistance, Collaboration, and Feedbacking on their coping mechanism of teachers and Strengthening Midyear Performance Review and Evaluation on the possible school contextualized policy on the preparation of their portfolio for their individual performance commitment and review form.

Recommendations

From the salient findings of this study and the conclusion reached, the following recommendations are presented. The school may craft a school learning action cell that deals with continuous professional development. The school may strengthen the implementation of a Learning Partnership Program that seasoned teachers may coach or mentor the neophyte teachers. Possible training on coping strategies in handling administrative and time management stress may be conducted to maintain the well-being of the teachers. Teachers may come up with advanced organizers to have focus and effective time management. That this study be replicated in wide scope to have a clearer picture quantitatively.

Compliance with Ethical Standards

This paper has a single author and confirms the ethical standards.

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EXPLORING THE MOTIVATION AND CHALLENGES OF NON-EDUCATION GRADUATES MAKING A CAREER SHIFT TO TEACHING IN PALAVILLA INTEGRATED SCHOOL

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ABSTRACT

This research delves into the motivations and challenges faced by non-education graduates transitioning to teaching at Palavilla Integrated School, Lutayan II district. It investigates factors driving their career shift, typical transition pathways, encountered challenges, and coping mechanisms. Employing qualitative research via key informant interviews, the study revealed motivations such as a focus on education and empowerment, passion for making a difference, and considerations for financial stability. Non-education graduates prioritize student-centered teaching, seek support and mentorship, and value work-life balance, viewing teaching as a path to personal fulfillment and job security. The pathways facilitated successful transitions, addressing factors like job stability, flexibility, and professional development. Despite challenges such as burnout, credibility issues, and mental health concerns, non-education graduates employed strategies like ongoing professional development, determination, and collaboration to succeed. Recommendations included understanding diverse motivations, providing support for transitions, and prioritizing mental health initiatives to enrich the teaching workforce and enhance educator success. Educational institutions were urged to foster a positive environment, embracing professional growth, collaboration, and adaptability while ensuring access to learning resources. Overall, by being proactive and seeking support, non-education graduates can thrive in their new teaching careers, positively impacting students' lives and enriching the field of education.

Keywords: *motivations, challenges, transitions, and support.*

INTRODUCTION

In recent years, there has been a growing trend of individuals with non-educational backgrounds seeking to make a significant career shift into the field of teaching. This phenomenon raises intriguing questions about the motivations driving these career transitions, as well as the unique challenges faced by these non-traditional educators in their pursuit of teaching career.

According to Goodwin, A., & Kosnik, C. (2013), becoming a teacher educator involves more than a job title. One becomes a teacher educator as soon as one does teacher education, but one's professional identity as a teacher educator is constructed over time. Developing an identity and practices in teacher education is best understood as a process of becoming. Though the work of teaching shares much in common with the work of teacher education, the two positions are significantly divergent in important ways.

In 2018, 16.4% of Filipino workers stated during the Labor Force Survey (LFS) period that they wanted to have more work hours in their present jobs, or to have an additional job, or to have a new job with longer work hours, i.e., declared themselves underemployed (Felipe, J., Sawada, Y., Estrada, G., & Bajaro, D. 2019). The pressing problem of unemployment and underemployment in the Philippines is viewed to be a product of job mismatch which in turn is a result of the diffusion of the interest in academic disciplines in the country. This interest has become the input to the work force of the Philippine industries (Quimilat, M. 2021).

In Lutayan District II, particularly in Palavilla Integrated School, there were some identified teachers employed who render their services in the field of education even though they're not education graduates. The researcher desires to conduct a study on Exploring the Motivation and Challenges of Non-Education Graduates Making a Career Shift to Teaching in Palavilla Integrated School, Lutayan II district.

Additionally, within the context of the Philippines, particularly at Palavilla Integrated School in the Lutayan II district, there has been a notable absence of research investigating the motivations and challenges encountered by non-education graduates who choose to shift their careers to teaching. Previous research in this setting has predominantly concentrated on assessing teachers' performance and the strategies employed in the classroom, irrespective of their educational backgrounds. This study addresses a significant gap in the current literature by homing in on the experiences of non-education graduates transitioning to the teaching profession. While extensive research exists on conventional teacher education routes, there is a dearth of information regarding the motivations and challenges faced by individuals with diverse educational backgrounds entering the teaching field.

Research Questions

This study focused on Exploring the Motivation and Challenges of Non-Education Graduates Making a Career Shift to Teaching at Palavilla Integrated School.

Specifically, it aimed to answer the following questions:

1. What are the factors or experiences motivating non-education graduates to consider a career in teaching?
2. What pathways do non-education graduates typically follow when transitioning into a teaching career?
3. What are the challenges and problems encountered by non-education graduates in career shifts into the teaching profession?
4. How do non-education graduates cope with the challenges and problems encountered in transitioning into a teaching career shift?

METHODOLOGY

The qualitative research design employed in the study aimed to delve into the motivation and challenges encountered by non-education graduates transitioning to a teaching career at Palavilla Integrated School in Lutayan District II, Lutayan, Sultan Kudarat. This approach allowed researcher to gather rich, detailed insights into the experiences of individuals making this career shift, providing valuable context, and understanding of their motivations and challenges.

The study focused on the participation of five (5) non-education graduates employed in Palavilla Integrated School. The identified non-education graduates are considered as informants of the Key Informant Interview. It was conducted for the school year 2023-2024.

RESULTS

Factors or experiences motivating non-education graduates to consider a career in teaching the themes that were generated were Educational Focus and Empowerment, Self-care and Professional Growth, and Financial Stability Considerations.

On the Pathways non-education graduates typically follow transitioning into a teaching career the following themes were generated Career Shift, Career Transition Programs, Streamlined Pathway for Certification, and Efficiency of Alternative Pathways

On Challenges and problems encountered by non-education graduates in career shift into the teaching profession, Professional and Career Challenges, Lack of Support, Formal Training and Seminars, Mental Health, and Well-being Issues.

As non-education graduates cope with the challenges and problems encountered in transitioning into a career shift, the following themes were generated, Professional

Growth and Development, Collaboration and Partnership, Adaptation and Flexibility, and Educational Access in Learning Resources

DISCUSSION

Factors or experiences motivating non-education graduates to consider a career in teaching

1. Educational Focus and Empowerment

Educational focus and empowerment are interconnected concepts that are essential for personal and societal development. Educational focus refers to the concentration and direction of efforts and resources towards specific learning goals and outcomes. It involves prioritizing certain knowledge, skills, and values within the educational system to meet the needs of individuals and society.

Educational Focus and empowerment comprise two different areas student-centered teaching and educator's perspective and motivation.

Student-centered Teaching. It is an approach to education that prioritizes the needs, interests, and abilities of students, placing them at the center of the learning process. Unlike traditional teacher-centered methods, where the instructor delivers information and directs the learning experience, student-centered teaching empowers learners to take an active role in their education.

To support this idea here are the statement responses of the informants.

> "*In the teaching profession, we aim to teach students to excel in almost all aspects of their lives so that eventually, they will become productive members of society."*
>
> *"The sense of satisfaction that comes from helping students succeed academically, socially, and emotionally can be deeply rewarding for me."*
>
> *"I find fulfillment in the relationships I build with my students, the sense of accomplishment that comes from helping them succeed, and the satisfaction of seeing the impact over time."*

The student-centered approach has been the center of attention in teaching and learning as the emphasis to shift away from the teacher-centered approach is growing. While the term has been widely used, it remains unclear how it can be effectively operationalized given the continuum nature of teacher-centered and student-centered approaches (Tang, K. 2014).

Educator's Perspective and Motivation. When educators are motivated and maintain a positive perspective, they are more likely to inspire and empower their students, foster a love for learning, and achieve meaningful educational outcomes. Therefore, supporting educators in cultivating a positive perspective and fostering their motivation is essential for promoting excellence in teaching and enhancing student success. The informants said the following statement;

"Passion for a subject or field, coupled with a desire to make a difference, can drive individuals towards career change and personal fulfillment, fostering flexible career paths."

I have a genuine passion for educating others and making a positive impact on young minds. This passion motivated me to overcome challenges associated with entering the teaching profession".

"The decision of the non-educator graduates to become teachers by showing them a value to also share knowledge and expertise by teaching the students skills that are trending currently in demand in the society."

2. Self-care and Professional Growth

Career growth or planning is a deliberate and ongoing process that individuals engage in to advance their careers and achieve personal and professional fulfillment. It involves setting goals, acquiring new skills, seeking out development opportunities, and making strategic decisions that align with one's aspiration. With this, self-care and professional growth is composed of factors such as professional support and mentorship and work-life balance.

Professional Support and Mentorship. Professional support and mentorship play crucial roles in the growth and development of individuals in various fields, including education. Professional support refers to the assistance, guidance, and resources provided to individuals to help them succeed in their careers. Mentorship, on the other hand, involves a more personalized and ongoing relationship where a more experienced individual provides guidance, advice, and support to a less experienced individual to help them navigate their career path. Here are the statements that support this idea;

"Mentors can offer insights into classroom dynamics, effective teaching strategies, and help navigate challenges unique to the teaching profession".

"Peer Mentoring Programs: Pairing us non-education professionals with experienced educators who can provide guidance, support, and practical advice tailored to our specific context and challenges".

"Find a mentor who is an experienced educator and can provide guidance, support, and advice tailored to the specific challenge".

A mentorship program facilitates employees' smoother integration into the workforce, enhances their professional growth, equips them with the ability to implement values and strategies effectively, supplements ongoing formal education, training, and development endeavors, and opens avenues for career advancement.

Work-life Balance. It is the equilibrium between the time and energy dedicated to work and the time and energy allocated to personal life, including family, leisure, and other non-work activities. Achieving a healthy work-life balance is essential for individuals to maintain physical, mental, and emotional well-being while effectively managing their

professional responsibilities and personal commitments. Based on the informants, they said that;

> *"Balancing Work and Personal Life - proactively managing workloads to maintain a healthy work-life balance".*
>
> *"Prioritize self-care to maintain physical, emotional, and mental well-being amidst the demands of teaching".*
>
> *"Non-education graduates recognize the Importance of self-care and allocate time for personal interests, relaxation, and rejuvenation."*

Work-life balance encompasses two primary dimensions: engagement in both work and non-work life and minimizing conflict between social roles in these domains. This conceptualization leads to a review of evidence regarding the consequences of work-life balance on work-related, non-work-related, and stress-related outcomes. Antecedents to work-life balance, both personal and organizational, are identified, along with their effects. Theoretical mechanisms linking work-life balance to overall life satisfaction are described, followed by a discussion of future research directions and policy implications.

3. Financial Stability Considerations

These are crucial factors that individuals often consider when making decisions about their careers and livelihoods. Financial stability provides a sense of security and peace of mind, allowing individuals to meet their basic needs, plan, and pursue their goals and aspirations. It encompasses factors such as income, savings, investments, and access to resources and opportunities. The informants frankly stated that they were motivated to choose the teaching profession, despite not being educators by profession, due to considerations such as job stability, tenure security, and job opportunities.

> *"Individuals looking for a career with job security may find teaching to be a viable option."*
>
> *"Individuals seeking job stability and security may be attracted to teaching as a reliable second career."*
>
> *"Teaching also is a stable career choice with opportunities for job security, especially with tenure systems in place".*
>
> *"I am a hypocrite if I say that the stability is not appealing to me, as a non-education graduate, I am seeking a reliable career path for the future of my children".*
>
> *"It also offers opportunities for personal and professional fulfilment, making a positive impact, and long-term career stability."*

The positive impact of effective financial education training on teachers directly translates to higher levels of positive financial behavior in students. When teachers are equipped with the tools and knowledge to teach financial literacy effectively, students are more likely to develop sound financial habits and make informed decisions regarding their finances both now and in the future.

Pathways non-education graduates typically follow transitioning into a teaching career.

1. **Career Shift**

Career shift represents a transformative journey that allows individuals to pursue their passions, explore new interests, and unlock their full potential. While it may involve uncertainty and risk, the rewards of a successful career shift can be immensely gratifying, leading to greater satisfaction and fulfillment in both professional and personal life. Based on the informants' statement that shifting in another career has led to different reasons;

> *"Non-educators' graduates may choose to transition into teaching for various reasons".*
>
> *"It can drive individuals towards career change as personal fulfillment, fostering flexible career paths."*

Shifting careers is a dynamic process influenced by a multitude of factors, including generational differences, gender, immigration status, and socioeconomic background. These factors can significantly impact individuals' career decisions, aspirations, and opportunities for advancement.

2. **Career Transition Programs**

Career transition programs play a vital role in helping individuals navigate changes in their careers and successfully transition to new opportunities. By providing a comprehensive range of services and support, these programs empower individuals to take control of their career paths, overcome challenges, and achieve their professional goals.

The informants highlighted that institutions are offering specialized programs that enable them to qualify for the teaching profession.

> *"Many state colleges and universities offer special programs for those degree holders to acquire necessary qualifications or certification to become teachers offering a Diploma in Teaching course".*
>
> *"They commonly take a course Diploma in teaching and sometimes earn only 18 educational units for them to be able to take the Licensure Examination for Teachers".*

In addition, one informant stated that there should be special programs that cater to their professional needs.

> *"These programs should be designed to accommodate the specific needs and prior knowledge of non-education professionals and pair no-education to experienced mentors who can provide guidance, support, and practical advice throughout their transition period."*

Career transitions play a crucial role in fostering professional growth and achieving work-life balance in healthcare. These transitions offer opportunities for individuals to

advance their careers, pursue new interests, and find alignment between their personal and professional lives.

3. Streamlined Pathway for Certification

To a simplified and efficient process for individuals to obtain professional certification in a specific field or industry. This pathway is designed to reduce unnecessary barriers and streamline the certification process, making it more accessible and manageable for candidates. Accordingly, the informants emphasized that there were policies that support and certification programs;

> *"Policies that support alternative certification programs make it easier for non-education graduates to transition into teaching roles by providing streamlined pathways to obtain the necessary certifications".*
>
> *"Programs that offer alternative certification pathways are designed for individuals with non-education backgrounds, often streamlining the certification process, making it more accessible for non-education graduates to become certified teachers."*
>
> *"Teaching Certification Programs provide flexibility for individuals to earn teaching credentials through short coursework."*

Career pathways, which encompass industry-based certifications and internships, are essential for preparing young adults for the labor market. These pathways provide valuable opportunities for hands-on experience, skill development, and exposure to real-world work environments, ultimately helping individuals make informed career choices and transition successfully into the workforce.

4. Efficiency of Alternative Pathways

The efficiency of alternative pathways refers to their effectiveness in providing individuals with streamlined and accessible routes to achieving their goals, often bypassing traditional methods. These pathways offer alternatives to conventional educational or career routes, allowing individuals to pursue their aspirations in a more flexible and expedited manner.

> *"Non-education graduates may find these pathways appealing due to their efficiency, allowing them to enter the teaching profession more quickly compared to traditional routes."*
>
> *"Influencing perceptions of the profession, creating opportunities for alternative pathways to certification, and addressing factors such as salary, job security, and work-life balance".*
>
> *"Those pursuing flexible pathways enroll in teacher certification programs offered by universities or colleges."*

Alternative pathways like apprenticeships and non-graduate employment are discussed in focus groups and interviews. It explores how the transition to work and responsible adulthood, and the support received, varies widely among individuals not pursuing higher education, reflecting differences across families, communities, and employers Hogheim, S., & Federici, R. (2020).

Challenges and problems encountered by non-education graduates in a career shift into teaching profession.

1. Professional and Career Challenges

The transition from education to work is a critical phase in professional career development and competence. It highlights challenges faced by graduates in the early career stages, such as unemployment threats, inadequate skills, decreased self-efficacy, and increased stress. Additionally, it examines issues like professional identity instability, early attrition, newcomers' roles in work communities, and the significance of workplace learning. The chapter emphasizes the role of social partnerships in addressing these challenges from a professional competence perspective Thomson, M., & Palermo, C. (2018). The professional and Career challenges covered the following such as, the potential for burnout and credibility challenges.

Potential for Burnout. The risk of experiencing physical, emotional, and mental exhaustion because of prolonged stress and overwork, often in the context of one's professional responsibilities. Burnout can manifest in various ways, including feelings of fatigue, cynicism, and decreased efficacy in one's work.

The informants delivered opinions that in career transitions they undergo stress and burnout.

> *"Professional obligations and personal responsibilities can contribute to increased stress and burnout among non-educator graduates in teaching role".*
>
> *"Non-education graduates may experience increased stress and burnout if they lack adequate support systems or coping strategies".*
>
> *"Non-education graduates may underestimate the challenges associated with teaching, leading to burnout and job dissatisfaction if they are not adequately prepared for the demands of the profession."*

Some of the informants conveyed that while the teaching profession posed challenges, it was also characterized by its inherent complexity and the intricacies involved in its execution.

> *"Teaching can be emotionally demanding, requiring patience, empathy, and resilience to navigate challenges such as student behavior issues, academic pressure, and workload demands.*
>
> *"These things contribute to the challenges encountered by non-education professionals by consuming all our time because of having many paperwork and other instructional materials to prepare that leading to stress that also affect to the family."*

Burnout often arises when discussing chronic stress experienced by individuals in professions involving frequent interaction with others, such as education. Teachers, who spend extensive time at work and engage in numerous relationships with students, colleagues, and parents, face mental and physical demands. Teaching and assessment

tasks further drain energy and effort. Consequently, the combination of resource demands, work requirements, and performance expectations can deplete teachers' energy and enthusiasm, potentially leading to burnout symptoms.

Credibility Challenges. It is the obstacles that individuals face in establishing trustworthiness and reliability in their professional roles or personal interactions. These challenges can arise due to various factors such as lack of experience, inconsistent behavior, or ethical lapses. Overcoming credibility challenges often requires demonstrating competence, honesty, and consistency in actions and communication. Additionally, building credibility may involve seeking feedback, admitting mistakes, and actively working to regain trust when it has been compromised. By addressing credibility challenges effectively, individuals can enhance their reputation and credibility, leading to stronger relationships and greater success in their endeavors.

The informants elaborated that lacking essential skills in teaching may result from several challenges.

> *"When non-education graduates enter the teaching profession, they may face several challenges such as lack of pedagogical knowledge, limited understanding of child development, difficulty in lesson planning, classroom management, limited knowledge of special education, & limited professional development opportunities*."
>
> *"Adapting to the dynamics of a classroom, managing student behavior, and fostering a positive learning environment can be challenging initially.*
>
> *"Credibility as educators, especially when lacking formal training or experience in the field of education, can pose significant challenges."*

The concept of credibility in the teaching profession can be understood in two dimensions: "credibility of the role" and "credibility in the role." The former refers to the overall prestige and social status attributed to the teaching profession and educational institutions within contemporary society. The latter refers to how individual teachers assume and enact their role, thereby making it credible or not credible in specific interactions, particularly within the classroom dynamic with students.

2. Lack of Support, Formal Training and Seminar

Drawing from the informants' statements, one significant factor contributing to these challenges was the absence of a support system. Given that they did not initially pursue education as their primary profession, they sought additional support such as training and seminars to address these needs.

> *"Non-education graduates may lack formal training in pedagogy, classroom management, and educational theory."*
>
> *"Non-education graduates lack training in pedagogy, and curriculum development. And classroom management techniques."*
>
> *They can affect their ability to effectively deliver the lessons, engage the students, and assess learning outcomes. As a result,*

student achievement and overall learning experiences may compromise."

The transition of educators from classroom to higher education settings, focusing on the support provided by a doctoral seminar called "Pedagogy of Teacher Education." Through collaborative self-study, the research sheds light on the development of identities as educators and future teacher educators within the course. Key themes identified include the cultivation of a collaborative mindset, the adoption of a teacher educator-researcher perspective, and the cultivation of critical self-awareness Bunn, G., & Wake, D. (2015).

Mental Health and Well-being Issue

It is an essential component of overall health, encompassing emotional, psychological, and social aspects of individuals' lives. It involves the ability to cope with stress, maintain positive relationships, and adapt to life's challenges effectively. Prioritizing mental health and well-being is crucial for promoting resilience, productivity, and overall quality of life. However, As articulated by the informants, their experiences underscore that teaching is a multi-tasking profession that often leads to exhaustion, which can significantly impact mental health and well-being.

"*Teaching can be a demanding profession with long hours, high workload, and significant stress."*

"Having many paperwork and other instructional materials to prepare that leading to stress."

"Requiring so much paper works and other non -teaching related works that make them exhausted".

Mental health is foundational to the well-being and effective functioning of individuals, as emphasized by the World Health Organization. Teaching, being one of the most stressful professions, places significant importance on the mental health of teachers. The factors within educational institutions that contribute to mental health issues and lack of well-being among teachers. It highlights the importance of teachers' mental and physical health in fostering student and school well-being. By raising awareness of these factors, it aims to empower school authorities to address teachers' mental health concerns and promote well-being. Teachers, like all individuals, have their own needs and may benefit from motivational support from counselors. Ultimately, prioritizing mental health well-being among teachers can rejuvenate their energy, enhance professional growth, and foster the holistic development of students.

Non-education graduates cope with the challenges and problems encountered in transitioning into career shift.

1. Professional Growth and Development

Professional development is essential for teachers to continually enhance their skills, knowledge, and teaching practices. Through ongoing development opportunities, teachers deepen their content knowledge, refine their instructional strategies, and build collaborative networks. Professional growth not only benefits individual teachers but also

contributes to the overall improvement of education quality, Watters, J., & Diezmann, C. (2015).

Determination and Commitment. These are essential qualities for achieving success in any endeavor. In the context of education, determination refers to the firm resolve to overcome challenges and obstacles in pursuit of educational goals. It involves perseverance, resilience, and the willingness to persist even in the face of adversity. Commitment, on the other hand, encompasses dedication, loyalty, and a sense of responsibility towards one's educational objectives and responsibilities. The informants emphasized that to overcome challenges in the teaching profession, one should possess these qualities so that they are motivated to perform their work effectively.

> *"Despite potential challenges like limited networking opportunities, educators remain committed to their growth and the success of their students."*
>
> *"The determination of non-education graduates to overcome challenges contributes significantly to our overall success in transitioning to teaching. This determination serves as a strong motivator, driving us to give our best effort in our jobs and to persevere regardless of obstacles."*
>
> *"My commitment to ongoing growth and development enables me to evolve as effective educators and make meaningful contributions to student success."*

Self-determination theory posits that motivation exists on a continuum, ranging from intrinsic motivation, which arises from within oneself and is driven by personal satisfaction or enjoyment, to extrinsic motivation, which comes from external factors such as rewards or punishments. This theory emphasizes the importance of autonomy, competence, and relatedness in fostering intrinsic motivation and promoting well-being . Commitment teachers has towards their profession and their students directly influences the quality of education provided. Moreover, the impact of school leadership on teacher commitment is substantial. Effective school leaders who align their values with those of their teachers can positively influence teacher commitment, leading to better student outcomes.

Self-Efficacy and Confidence. are vital aspects of effective teaching practice. Educators who possess high levels of self-efficacy and confidence are better equipped to meet the challenges of teaching, foster student success, and contribute positively to the learning environment. As per the statements of the informants, recognizing accomplishments within the profession boosts confidence.

> **"***Celebrating small victories helps build confidence and resilience in the face of challenges.*
>
> *"Determined individuals often embrace a growth mindset, believing that abilities."*
>
> *"Guidance that we find the most helpful in overcoming obstacles".*

Teacher self-efficacy influences instructional approaches, individual and collaborative endeavors, and persistence, and may fluctuate depending on the

circumstances and challenges encountered by teachers. And confidence plays a vital role in teachers' successful performance of professional activities, as it correlates positively with self-awareness and the desire for acknowledgment.

Attending Training and Seminars. It is a fundamental aspect of professional development for educators, providing opportunities to enhance their knowledge, skills, and instructional practices. These sessions offer valuable insights into emerging trends, teaching methodologies, and educational research, empowering teachers to stay updated with the latest advancements in their field. Additionally, training and seminars foster collaboration and networking among educators, facilitating the exchange of ideas and best practices. According to the informants, participating in such activities, teachers can improve their effectiveness in the classroom, contribute to student learning outcomes, and ultimately, advance their careers in education.

> *"Appropriate training and seminars are essential to prepare them mentally and emotionally for the teaching environment."*
>
> *"Giving proper and necessary trainings or seminars to enhance their skills and motivation to teaching."*
>
> *"Provide with opportunities to participate in training on seminars in relation to the personal development and self enhancement."*
>
> *"Workshops and training sessions specifically designed for non-education graduates that can help them develop essential teaching skills. These workshops can cover topics such as lesson planning, assessment strategies, differentiated instruction, and creating inclusive learning environments."*

Induction seminars for new teachers serve as crucial platforms for providing emotional support and creating a non-threatening environment. These seminars primarily focus on helping new teachers cope with discipline issues, bolstering their self-confidence, and fostering the development of a professional identity. By addressing these key areas, induction seminars aim to equip new teachers with the necessary skills and mindset to navigate the challenges of their profession effectively.

Skills Enhancement. The continuous development and improvement of educators' abilities to effectively fulfill their roles in the classroom. This process involves acquiring new knowledge, refining existing skills, and adapting teaching practices to meet the evolving needs of students and the educational landscape. The informants clearly emphasized that practical and hands-on training can enhance teaching skills.

> *"Offering practical and hands-on training experiences that allow non-education professionals to develop essential teaching skills in real-world classroom settings".*
>
> *"Non-education graduates who value intellectual growth and professional development may see teaching as a career that allows them to keep learning and adapting."*
>
> *"It recognizes the importance of specialized skills and understanding in catering to diverse learning requirements."*

Skill enhancement training refers to programs and initiatives designed to improve employees' skills and competencies in the workplace. These training sessions aim to bridge the gap between the skills demanded by industries and the skills acquired through academic education. By providing employees with opportunities to develop new skills or refine existing ones, organizations can positively impact employee performance and job satisfaction.

2. Collaboration and Partnership

The informants underscored the importance of receiving supervisory feedback and technical assistance from experts such as master teachers, principals, and supervisors. They highlighted that this support can significantly contribute to the development of their teaching skills.

> *"Supervisors can offer guidance and support based on the unique needs and experiences of non-education graduates".*
>
> *"Implementing regular check-ins with supervisors to discuss challenges, progress, and areas for improvement."*
>
> *"Feedback and Evaluation Mechanisms - Establish constructive feedback and evaluation mechanisms to help non-education graduates reflect on their teaching practices."*

Teachers, collaboration provides opportunities for professional growth, sharing best practices, and gaining diverse perspectives that enrich their teaching practice. At the school level, collaboration fosters a culture of collective responsibility, promotes innovation, and leads to continuous improvement in teaching and learning. In addition, partnerships in teacher education play a crucial role in ensuring that teacher preparation programs are practice-relevant and effectively bridge the gap between theory and practice. Innovative thinking and competent academic leadership are essential in fostering these partnerships and maximizing their impact.

3. Adaptation and Flexibility

Educators who demonstrate adaptability can modify their teaching methods, curriculum, and instructional strategies to accommodate diverse learners and changing educational environments. Flexibility allows educators to embrace new technologies, pedagogical approaches, and curricular innovations, fostering a dynamic and responsive learning environment. Furthermore, informants provided insights into how successful non-educators exhibit adaptability and flexibility.

> *"In a way of successful non-education graduates demonstrate adaptability and flexibility in adjusting to the demand and dynamic of the teaching profession."*
>
> *"Flexible and adaptable in responding to the unique needs and challenges of students, colleagues, and the educational environment."*

Modeling resilience, adaptability, and lifelong learning is essential for navigating the challenges in education and inspiring others to embrace change and growth.

Effective teachers demonstrate the ability to adjust their teaching strategies to meet the diverse needs of their students. However, the terminology used to describe this adaptive approach differs among academic disciplines, which can create barriers to effective communication and understanding among educators. Flexible learning is a guiding principle that empowers both learners and educators to make choices regarding the timing of their engagement, the resources they utilize, and their overall approach to education. This flexibility accommodates diverse learning styles and preferences, facilitating enhanced learning experiences across various modes of study.

4. Educational Access in Learning Resources

Teachers' access to learning resources directly impacts their ability to deliver high-quality instruction and support student learning outcomes. Providing teachers with the necessary tools, materials, and opportunities for professional development is essential for building a supportive and conducive learning environment. The informant highlighted that access to resources plays a crucial role in addressing various challenges encountered in the teaching profession.

"Addressing the challenges faced by non-education graduates transitioning into teaching careers requires a multi-faceted approach and access to various resources and support systems."

"Access to Resources and Tools: Providing us with access to resources, tools, and technology that can support our teaching efforts, such as lesson planning templates, educational apps, and online learning platforms."

K-12 teachers recognize the advantages of incorporating open educational resources (OER) into their teaching practices, acknowledging their potential to enhance student learning outcomes and provide diverse instructional materials (Tang, H. 2020.).

Conclusions

Non-education graduates are drawn to teaching careers by a variety of factors, including a focus on education and empowerment, a desire to make a difference, and the importance of self-care and professional growth. Financial stability considerations, such as job security and opportunities for personal fulfillment, also play a significant role. These diverse motivations reflect the multifaceted nature of their decision-making process.

Non-education graduates entering teaching careers have diverse pathways, including career shift opportunities and streamlined certification processes. These pathways prioritize job stability and professional development, offering tailored support to meet non-education professionals' needs. Their availability reflects the complexity of career transitions and underscores the importance of accessible routes into teaching.

Non-education graduates transitioning into teaching face several challenges. Burnout, exacerbated by stress and demanding roles, is compounded by insufficient support and training. Credibility issues stem from limited experience, impacting trustworthiness. Mental health concerns arise due to stress. Prioritizing mental health support is crucial for resilience and student outcomes. Collaboration between institutions and policymakers is necessary to address these challenges effectively.

Non-education graduates transitioning into teaching careers face challenges but also demonstrate qualities and strategies for success. Opportunities for professional growth, determination, and commitment drive educators to overcome obstacles. Self-efficacy and collaboration enhance effectiveness, while adaptability meets diverse student needs. Access to resources and integration of open educational resources enhance teaching effectiveness. Leveraging strengths, non-education graduates thrive in teaching, contributing meaningfully to education.

Recommendations

From the salient findings of this study and the conclusion reached, the following recommendations are presented:

1. Educational institutions may recognize and address the diverse motivations that drive non-education graduates to pursue teaching careers. By understanding the significance of educational focus and empowerment, promoting self-care and professional growth opportunities, and providing financial stability, institutions can attract and retain talented individuals from various backgrounds. Fostering a supportive environment that values these motivations will not only enrich the teaching workforce but also contribute to the overall success and fulfillment of educators.

2. Non-education graduates embarking on teaching careers have diverse pathways to choose from. They may opt for career shifts driven by personal fulfillment and flexibility, engage in specialized training through career transition programs, utilize streamlined certification pathways, or explore alternative routes into teaching. Recognizing and supporting these pathways is crucial for empowering non-education graduates to successfully transition into teaching roles. By doing so, educational institutions and policymakers can enrich the teaching workforce and create a supportive environment for individuals eager to contribute to education.

3. Transitioning into teaching presents growth opportunities for non-education graduates despite initial challenges. They may face hurdles like burnout and credibility issues, yet institutions can support them through mentorship and professional development. Addressing the lack of support, training, and seminars enhances their classroom management and student engagement. Prioritizing mental health initiatives ensures they thrive in their roles. By fostering a positive

environment, educational institutions can facilitate non-education graduates' successful transition into teaching and enrich the field of education.

4. Non-education graduates transitioning into teaching face challenges, but with the right mindset and support, they can succeed. Recommendations include embracing professional growth through continuous learning, fostering collaboration with mentors and colleagues, adapting to changing educational needs, and ensuring access to learning resources. By being proactive and seeking support, non-education graduates can thrive in their new career path and positively impact their students' lives.

Compliance with Ethical Standards

This paper has a single author and confirms the ethical standards.

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EXPLORING THE RELATIONSHIP OF PARENTS' SOCIO-ECONOMIC BACKGROUND AND STUDENTS' ACADEMIC PERFORMANCE: BASIS FOR UNIVERSITY EXTENSION SERVICE AGENDA

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ABSTRACT

Having been trapped with the notion that education is terms of what money can buy, this study aimed to investigate the relationship between parents' socioeconomic status and the academic performance of Grade 11 students in Mindanao State University – Sulu Senior High School. To achieve this, a sample of 130 respondents from Grade 11 were selected using random sampling technique and checklist questionnaires were administered to the respondents. The collected data was analyzed using Frequency for counts and percentage of the variables, Mean, One-Way ANOVA as well as Chi-Square Test. Results revealed that majority of the students' parents were farmers or fisher folks, with a monthly income of P5,000.00 and below and managed to finished secondary education. It was also found that students' academic performance may vary heavily with the influence of their parents' income, and their educational attainment also showed a relationship. Whereby, parents' occupation has no significant difference and relation to how students perform in school. Therefore, schools can use the findings of this study in order to implement policies or programs to reduce financial inequality as well as educational disparities among students from diverse backgrounds in Sulu.

Keywords: *Socioeconomic Status, Academic Performance, Parents, MSU – Sulu, Extension Service*

INTRODUCTION

Understanding the complexities of 21st century issues in education is quite very challenging. Living in a third world country like Philippines where most parents are almost limping with the quagmire of financial woes and misery, quality education is no doubt as far from reality (Ordoñez, 2015; Abdurahman & Omar, 2021).

Issue on parents' socio-economic status are undeniably facing education realities. This imparts the idea that the resources and status of an individual may possess greater sphere of influence in the educational playing field. It is a truism that families with great wealth could access proper services and privileges in education contrary to those who have not. According to Muhammad, Edi & Hermantu (2022), the different economic status of parents will directly cause different academic achievements of the students thus even lead to educational disparities.

Meanwhile, academic performance is interpreted as how students perform in school academically. Ellie Williams (2018) said that academic performance is not only reflected by the general point average (GPA) but also includes factors such as good leadership skills and eagerness to excel academically. Education is undeniably interconnected with social and economic structures as it serves as the navigator of social mobility, which emphasizes the importance of understanding the factors that may influence the students' academic paths (World Bank, 2016).

Many studies have looked upon the connection between these variables. It shows that students from wealthier families often have more privileges like private tutoring and conducive environment for learning, which imply that being born rich is actually a better sign of adult success (Carnevale et al., 2019). On the other hand, because of low situation of socioeconomic status of some individuals, it would be difficult to purchase needed materials and provide support. Thus, the hindering the quality of education the students should have in the first place (Esther, 2018).

For several decades now, school administrators have to cope with litany of changes vis-a-vis the ever-evolving educational dynamism in the playing field (Isa J., Madjid J., et al., 2024; A. Abdurahman, 2023; Abdurahman et al., 2024) **.** Researches relating socioeconomic status to academic performance were conducted in developed countries and urban areas, lacking any susceptible studies in rural or remote areas such as Sulu, Philippines. For this reason, this study aims to uncover how social and economic factors may influence the learning performance of the Grade 11 students attending MSU-Sulu Senior High School, a public institution in Patikul, Sulu. Understanding this dynamic is crucial for educators and administrators to identify strategies in order to address the rampant educational inequalities and aim to narrow the achievement gap among students with diverse backgrounds.

Research Questions

The purpose of this study is to figure out how parents' socioeconomic status relates to the academic performance of Grade 11 Students of MSU – Sulu Senior High School.

Therefore, the intention of this study is to directly answer the following questions:

1. What is the profile of the Grade 11 Students of MSU – Sulu Senior High School in terms of parents' income, educational attainment, and occupation?
2. What is the level of academic performance of these students?
3. Is there a significant difference on the academic performance when they are grouped according to parents' income, educational attainment, and occupation?
4. Is there any significant relationship between parents' socioeconomic status on the academic performance of the students?

METHODOLOGY

This section discusses the research methodology of the study which includes the research locale, respondents of the study, data collection, research instrument, and data gathering procedure and statistical techniques and scope and delimitation of the study.

Research Locale

The researchers conducted the study at MSU – Sulu Senior High School Department, by means of a room-to-room survey starting from the Old Biology Building, down to the main building's first floor to third floor of each room. This was conducted following the 3rd quarter of the institution's academic year 2023-2024. Mindanao State University – Sulu is a public educational university, founded in 1974 by the government to advance the state of education in the Province of Sulu, situated at Capitol Site, Patikul, Sulu. The choice of the setting of this study was inspired by the following reasons: First MSU-Sulu is the only university in the province of Sulu catering senior high students from diverse financial background. And second, the findings of this study could somehow help the administration in formulating programs that inspired inclusiveness of all constituents.

Respondents of the Study

The MSU – Sulu Senior High School Department has a total of 1,055 population of Grade 11 students which composed of 13 sections for the Academic Year 2023 – 2024. The researchers surveyed 10 randomly picked participants coming from each section of the Grade 11 students resulting to a total of 130 respondents. The researchers have decided to take these students as respondents of the study for the following reasons: First, the results derived from study will somehow become a baseline data for the faculty members to craft programs and policies to augment students' academic performance. Second, this will also help struggling students who are financially handicapped to strive

much harder to cope with the performance of those students coming from well off family. Third, the researchers found it accessible to conduct the study since they are also enrolled in the same institution.

Data Collection

The data collection process for this study required a systematic and collaborative approach of the researchers. Initially, formal permission was obtained from the Director of Senior High School Department to conduct the survey. At the same time, the researchers ensured that the research meets academic standards and any concerns was formally address through regular consultation with the thesis adviser. A comprehensive questionnaire based on an extensive literature review was developed and tested for clarity. A stratified random sampling technique was used to select 10 respondents from each of the 13 sections of Grade 11, resulting in a total of 130 respondents, with consents obtained from the advisers and respondents. The researchers conducted a robust statistical analysis after the collection of data to determine the relationship of parents' socioeconomic status and educational achievement of students.

Instrumentation

The researchers used a survey method to support and acquire more necessary data to the study. The survey instrument used was a checklist questionnaire formulated by the researchers to evaluate the result and determine if there is a correlation between the students' academic performance to their parents' social and economic status.

The checklist questionnaire was divided into two parts. The first part contains the students' demographic profile, in which their name and academic performance from the 1st semester was collected. Whilst, the demographic profile of parents, including their name (optional) and socioeconomic status, such as income, educational attainment, and occupation was on the second part of the questionnaire.

Statistical Techniques

To tackle the research questions and meet the objectives, various statistical tools were utilized for analyzing the collected data from respondents. Concerning the first problem (SOP 1), the researchers used frequency to depict students' profiles in terms of their parents' income, educational attainment, and occupation. This approach involves counting students in each category or range and presenting the data through tables and graphs. For the second problem statement (SOP 2), the average mean was applied to gauge students' academic performance based on their first semester grades. This method allows the calculation of the average grade or score, facilitating a comparison with academic excellence standards. In the third statement of the problem (SOP 3), One-Way ANOVA was utilized to answer the difference of the academic performance based on the profile of their parents. Finally, the fourth problem (SOP 4) used Chi-Square Test to assess the strength and direction of the association by assessing whether parents'

socioeconomic status has a positive or negative relationship on the academic performance of students. These statistical tools provided a thorough and systematic data analysis to address the research questions.

Scope and Delimitation

This study explored the relationship of students' academic performance in and the parents' socio-economic in Mindanao State University-Suly Senior High School Department. This investigation exposed how various factors associated with Socio Economic Status such as parents' income, level of educational qualification, and occupation influence students academic performance determined by the general point average (GPA) of the students. Furthermore, this investigation was limited only to the Grade 11 students of MSU-Sulu senior high school. While considering the potential influence of family status of on the students' academic performance, this study did not dig deeply to consider factors like family structure, students' study techniques, and learning preferences. Time element was also considered a potential limitation of this investigation.

RESULTS

A. Students' Demographic Profile

Table 1: presents the profile of the students in MSU-Sulu Senior High School in terms of their parents' monthly income, educational attainment and occupation. As to monthly income, the majority (62.3%) have an income of P5,000.00 and below. As to their educational attainment, majority (18.5%) finished the secondary education. Lastly, as to the parents' occupation, majority (30.0%) were farmers or fisher folks.

Table 1: Students' Demographic Profile

Parents' Monthly Income	**Frequency**	**Percentage**
P5,000.00 and below	81	62.3
P5,001.00 to P10,000.00	18	13.8
P10,001.00 to P15,000.00	7	5.4
P15,001.00 to P25,000.00	11	8.5
P25,001.00 to P50,000.00	10	7.7
P50,001.00 and above	3	2.3
Parents' Educational Attainment	**Frequency**	**Percentage**
No Formal Education	17	13.1
Elementary/Primary Education	18	13.8

Finished Elementary Education	7	5.4
High School/Secondary Education	22	16.9
Finished Secondary Education	24	18.5
Collage/Tertiary Education	23	17.7
Finished Tertiary Education	19	14.6
Total	130	100.0

Parents' Occupation	**Frequency**	**Percentage**
Government Employee	25	19.2
OFW	7	5.4
Farmer/Fisher Folk	39	30.0
Businessman	15	11.5
Vendor/Salesperson	20	15.4
Others	24	18.5
Total	130	100.0

B. Level of Academic Performance

Table 2 provides the result of level of the academic performance of Grade 11 students in MSU - Sulu. The overall mean is 87.71% with a verbal description of Very Satisfactory (85-89).

Table 2: Level of the Students' Academic Performance

Academic Performance	**Mean**	**Verbal Description**
Grade 11 students	87.71%	Very Satisfactory

Legend: Outstanding = 90-100; Very Satisfactory = 85-89; Satisfactory = 80-84; Fairly Satisfactory= 75-79; and Did Not Meet Expectation = 74 or below

C. **Difference on the Students' Academic Performance According to Parents' Socioeconomic Status**

Table 3 depicts the significant difference of students' academic performance according to parents' socio-economic status. The results revealed that p= .14.

Table 3 : Difference of Academic Performance According to Parents' Socioeconomic Status

Measure	P5,000.00 and below		P5,001.00 – P10,000.00		P10,001.00 – P15,000.00		P15,001.00 – P25,000.00	
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*

Monthly Income	86.7	3.9	89.5	2.7	89.8	3.3	89.0	5.5

P25,001.00 – P50,000.00		P50,001.00 and above		F(5, 124)	p-value
M	*SD*	*M*	*SD*		
86.6	2.4	90	3.4	2.984	.014

**Significant at p<0.05*

D. Difference on the Academic Performance According to Parents Educational Qualification

Table. 4 illustrates the significant difference on the students' academic performance according to educational qualification of the parents. The result is the following: F (6, 123), p = .099.

Table 4 : Difference of Academic Performance According to Parents' Educational Attainment

Measure Educational Attainment	No formal Education		Elementary/Primary Education		Finished Elementary Education		High School / Secondary Education	
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
	86.5	3.6	87.2	3.4	88.6	2.2	86.5	4.8

Finished Secondary Education		College / Tertiary Education		Finished Tertiary Education		F(6, 123)	p-value
M	*SD*	*M*	*SD*	*M*	*SD*	1.829	.099
86.6	3.1	88.7	3.8	89.3	4.6		

**Significant at p<0.05*

E. Significant Difference of the Students' Academic Performance According to Parents Occupation.

Table 5 illumines the significant difference on the students academic performance according to their parents' occupation such as: Government employee, OFW, Farmer/Fisherfolks' Businessman, Vendor/ salesperson, etc. The result was , F (5, 124), p = .113.

Table 5: Difference of Academic Performance with Parents Occupation

Measure Occupation	Government Employee		OFW		Farmer/Fisher Folk		Businessman	
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*

	88.4	4.2	86.8	4.0	86.1	3.5	87.4	3.2

Vendor/Salesperson		Others		F(5, 124)	p-value
M	*SD*	*M*	*SD*		
88.6	4.2	88.3	4.1	1.824	.113

and above

Note. x^2 *= Chi-square value*
**Significant at p=0.05*

Relationship of Students' Academic Performance and Parents Socio Economic Status

This section portrays the relationship of students' academic performance and parents' socio economic status in terms of monthly income, parents' occupation and their educational qualification.

A. *Relationship of Students' Academic Performance and Parents' Monthly Income*

Table 6 sheds light on the relationship between students' academic performance with the parents' monthly income. The parents' income ranges from 5,000 and below to 50, 000 and above. The results revealed the following: x2(15, N=130) = 26.095, p = .037.

Table 6. Relationship of students' academic performance and parents' monthly income

Parameters		Level of Academic Performance					
		Fairly Satisfactory (75-79)	Satisfactory (80-84)	Very Satisfactory (85-89)	Outstanding (90-100)	x2	p
Monthly Income	P5,000.00 and below	2	29	33	17	26.095	.037
	and above						

Note. x^2 *= Chi-square value*
**Significant at p=0.05*

B. *Relationship of Students' Academic Performance and Parents' Educational Qualification*

Table 7 spouses the relationship of students' academic performance with the parents' educational qualification. Meanwhile, the parents educational qualification are categorized into : No formal education, elementary/primary education, high school education, finished secondary education, College/tertiary education, finished college or tertiary education. The result was x2 = 31.435; and p = .026.

Table 7: Relationship of students' academic performance and parents' educational qualification.

Parameters		Level of Academic Performance					
		Fairly Satisfactory (75-79)	Satisfactory (80-84)	Very Satisfactory (85-89)	Outstanding (90-100)	x2	p
Educational Attainment	No Formal Education	1	4	11	1	31.435	.026
	Elementary/Primary Education	0	5	8	5		
	Finished Elementary Education	0	0	5	2		
	High School / Secondary Education	1	10	4	7		
	Finished Secondary Education	0	10	10	4		
	College/Tertiary Education	1	3	9	10		
	Finished Tertiary Education	0	4	4	11		

Note. x^2 *= Chi-square value*
**Significant at p<0.05*

C. Relationship of Students' Academic Performance with Parents' occupation.

Meanwhile, parents occupation is categorized into government employee, OFW, Farmer or fisherfolk/ businessman, vendor/ salesperson and others. The result was x2 + 17.975; and p=.264.

Table 8: Relationship of students' academic performance and parents' occupation.

Parameters		Level of Academic Performance					
		Fairly Satisfactory (75-79)	Satisfactory (80-84)	Very Satisfactory (85-89)	Outstanding (90-100)	x2	p
Occupation	Government Employee	1	4	9	11	17.975	.264
	OFW	1	1	3	2		
	Farmer/Fisher Folk	1	14	18	6		
	Businessman	0	4	8	3		
	Vendor/Salesperson	0	6	5	9		
	Others	0	7	8	9		

Note. x^2 = Chi-square value
**Significant at p<0.05*

DISCUSSION

This section discusses the results on the exploration on the relationship of students' academic performance with the parents' socio-economic status. This also highlights the profile of the respondents and the significant difference of students' academic performance according to the respondents' profile.

A. Students' Demographic Profile

Gleaning from the table 1, the majority 80 (62.3%) of the Grade 11 students' parents' monthly income were P5,000.00 and below; while, 18 (13.8%) of them have an income of P5,001.00 – P10,000.00. Meanwhile, 11 (8.5%) generate money of P15,000.00 – P25,000.00. Also, 10 (7.7%) parents have P25.0001 – P50,000.00, while 7 (5.4%) of them have P10,001.00 – P15,000.00. And only 3 (2.3%) of the parents belong to have an income of P50,001.00 and above. Hence, it can be interpreted that most of the students' parents have a monthly income of P5,000.00 and below.

As to the parents' educational attainment, majority of 24 (18.5%) managed to finish the secondary education, the 23 (17.7%) of them have college or tertiary education. The 22 (16.9%) got the high school or secondary education, while 19 (14.6%) finished the tertiary education. Furthermore, 18 (13.8%) of the parents only have the elementary or primary education, with 17 (13.1%) have no formal education. And only 7 (5.4%) finished the elementary education. Therefore, this can be deduced that educational attainment of majority of the parents only finished the secondary education.

In terms of the occupation, the majority of 39 (30.0%) parents were farmers or fisher folks, while 25 (19.2%) served as government employees, with 24 (18.5%) parents with specified jobs other than mentioned. Meanwhile, 20 (15.4%) worked as vendors or salesperson, and 15 (11.5%) of them were businessman. And only 7 (5.4%) parents were OFW. Thus, the findings concluded that majority of the parents were farmers or fisher folks.

The findings denote that majority of parents' income generated ranging between P5,000.00 and below. Corollary to this result, Delelis (2019) found that 35.87% of the respondents from College students of BS Accounting Information System of Cagayan State University – Andrews Campus belonged to the households whose monthly income, falling between P5,001.00 and P15,00.00, deemed as insufficient to meet both demands of the students' families and academic duties. Furthermore, majority of the educational attainment of the parents only managed to finish the secondary education, while the occupation were farmers or fisher folks. Kwarteng (2022) corroborates in their study on JHS students in the Upper West Akim District in Ghana that 80% of their parents has either no formal education or only managed to finish basic secondary education, whilst 70% were farmers at the same time.

B. Level of the Students' Academic Performance

Based on Table the overall mean of the students' academic performance is 87.71% with a verbal description of Very Satisfactory (85-89). This implies that the Grade 11 students of Mindanao State University-Sulu Senior High School have performed very well, thus, meeting the satisfactory grades in school.

Anent this finding, several scholars have defined and characterized academic performance as determining factor of a student's capacity for academic success. According to Kirschner and Karpinski (2010), Academic performance is determined by the number of hours studied per week and Grade Point Average (GPA) In addition, Yusuf, et al. (2016) pointed out that it is a student's observable and quantifiable behavior throughout a given time period. Furthermore, it encompasses a student's performance on assignments, assessments, midterms, simulated tests, and final exams.

C. Difference on the Students' Academic Performance According to Parents' Socioeconomic Status

This section provides a discussion on the significant difference on students' academic performance with the socio-economic status of their parents which includes the monthly income, educational qualification and parents' occupation.

C.1 : Difference of Students' Academic Performance and Monthly Income

In Table 3, a one-way ANOVA was employed to assess the difference between parents' monthly income and students' academic performance. The findings revealed that

there was a significant difference between the two variables, F (5, 124), p = .014. The hypothesis which states that “there is no significant difference on the academic performance of the students when they are grouped according to parents’ monthly income” is hereby rejected. This implies that academic performance of the students varies significantly according to the parent’s monthly income. The higher is the income, the higher is the academic performance. While students whose parents were having lower income have also performed low academically.

This finding is reinforced by Masereka et al. (2023) in their study on Influence of the Family Income on Academic Performance Among Secondary School Students of Kitswamba and Rugendabara-Kikongo Town Councils in Uganda. The result showed a significant difference wherein students from wealthier family outperform those students from lower income households.

C.2 : Difference of Students’ Academic Performance and Parents’ Educational Attainment

As illustrated in Table 4, a one-way ANOVA was employed to assess the difference between parents’ educational attainment and students’ academic performance. The findings revealed that there was no significant difference between the two variables, F (6, 123), *p* = .099. This denotes that regardless of their parents’ educational attainment, the students’ academic performance is almost the same.

This finding is supported by the study of Mohammad Ali et al. (2021), that 63.8% respondents from Yobe State, Nigeria’s Government Day Junior Secondary School in Gashaka that their parents’ educational attainment has minimal to no effect on their academic performance.

C.2 : Difference on the Students’ Academic Performance and Parents’ Occupation

As depicted in Table 5, A one-way ANOVA was employed to assess the difference between parents’ occupation and students’ academic performance. The findings revealed that there was no significant difference between the two variables, F (5, 124), p = .113. The sig. value accepted the null hypothesis of the study stating that “there is no significant difference on the academic performance of the students when they are grouped according to parents’ occupation”. This means that the students’ academic performance would remain the same even when their parents have varied occupation.

Relative to this finding ,however, Kamal et al. (2022) stated that between students whose parents reported being less involved in their education, the former group showed greater academic success across all subject areas due to the higher occupational background of the students.

D. Relationship Between Students' Academic Performance and Parents' Economic Status

This section discusses the relationship of students academic performance and parents' economic status in the contest of their monthly income, educational attainments and parents' occupation.

D.1 : Relationship of Students Academic Performance and Parents' monthly income

As presented in Table 6, a Chi-Square Test of Association was employed to assess the relationship between parents' monthly income and students' academic performance. The findings revealed that there was a significant relationship between the two variables, x2(15, N=130) = 26.095, p = .037. This portrays that the performance of the students has a relation to their parents' monthly income.

In this regard, Ogunshola (2019) also found the relationship of the income to the academic performance of the students in Public Senior Secondary Schools in Abuja Municipal Area Council in Nigeria. This led to a conclusion that income may influence the performance of the students in school.

D.2 : Relationship of Students Academic Performance and Parents' Educational Attainment

In table 7, Chi-Square Test of Association was employed to assess the relationship between parents' educational attainment and students' academic performance. The findings revealed that there was a significant relationship between the two variables, x2(18, N=130) = 31.435, p = .026. Therefore, the degree of education that the parents have has relationship to the academic performance of the students.

Similar to this finding is the study of Hussain (2020) were 88% students from Government Secondary School of District Mardan, showed a consistent relationship between performance in school and their parents' educational attainment. This implies that depending on the degree of the education that their parents have, students' performance in school may vary significantly.

D.3 : Relationship of Students Academic Performance and Parents' occupation

Based from Table 8, a Chi-Square Test of Association was used to assess the relationship between parents' occupation and students' academic performance. The findings revealed that there was no significant relationship between the two variables, x2(15, N=130) = 17.975, p = .264. This finding shows that, students' performance academically would remain constant without the connection from their parents' occupation. Although, there were few available related studies that could support this finding, therefore further study is needed concerning this matter.

Conclusions

Based from the findings, this study concluded that majority of the respondents were from low-income families having a P5,000.00 and below monthly income, with their parents finishing secondary education who were farmers or fisher folks. And that the students' academic performance has an association to income in which grades of the students with parents who have average income of P5,000.00 and above are significantly high when comparing from lower income of P5,000.00 and below. Educational attainment also has a relationship but there was no difference on the academic performance of the students. While there was no significant difference and relationship between the academic performance to the occupation of the parents.

Recommendations

1. Schools can use the findings of this study as a basis in advocating for strengthened supports and resources for students from low-income families, especially those whose parents are working in underrepresented occupations such as agriculture, to improve student academic performance.
2. Students are recommended to continue striving for high grades and teachers are encouraged to implement support strategies to maximize and further improve the academic performance of students from diverse socioeconomic status.
3. Governments can also use the research findings of this study as a basis for implementing policies or programs to reduce financial inequality and provide support to families with low financial incomes to help the parents meet the students' educational needs.
4. Schools may also establish scholarship opportunities specifically tailored for students with parents of lower educational attainment and introduce supplementary resources, such as tutoring services or access to educational materials, for students facing financial problems.
5. Future researchers are recommended to use this study in order to explore additional information to validate and give more accuracy to the present findings of this study.

Compliance with Ethical Standards

Since this study is trying to analyses the relation between the academic performance of Grade 11 STEM students at MSU-Sulu Senior High School and the socioeconomic status of their parents, respondents were informed about the study's objectives. Proper ethics and protocols were observed during the data gathering of researchers. Participation was voluntary and ethical standards such as welfare, rights and privacy of the information taken were prioritized. Any results and findings obtained by the researchers were highly preserved with confidentiality with utmost capability.

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FACTORS AFFECTING LEARNING MATHEMATICS AMONG GRADE 11 STUDENTS OF NOTRE DAME OF JOLO COLLEGE SENIOR HIGH SCHOOL

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ABSTRACT

This study assessed the extent of factors affecting learning Mathematics among Grade 11 students in Notre Dame of Jolo College Senior High School. It employed descriptive-correlational research design with 100 student-respondents taken through stratified random sampling method. The following are findings of this study: Of the 100 student-respondents, most are aged 16-17, female, and enrolled in the STEM, GAS, or HE CG strands. The majority of the students' parents have a college degree, and an average monthly income between 5,001 and 20,000; The student-respondents often show interest and positive study habits in learning Mathematics, always agree that their math teacher has positive personality traits and teaching skills that influences their learning of Mathematics, often agree that their math teacher uses various instructional materials that enhances their learning of Mathematics, and often agree that home-related factors affect their learning of Mathematics; No significant difference in the extent of factors affecting learning Mathematics among Grade 11 students in Notre Dame of Jolo College Senior High School when data are grouped according to gender, age, and parents' average monthly income, except for strand, and parents' highest educational attainment; And generally, there is a significant positive correlation among the sub-categories subsumed under the extent of factors affecting learning Mathematics among Grade 11 students in Notre Dame of Jolo College Senior High School, except between home-related factors and interest, personality traits, and teaching skills. This study recommends the following: School heads should provide adequate support and resources for the Mathematics teachers and students, such as hiring qualified and competent teachers, providing sufficient and updated instructional materials, and creating a conducive and stimulating learning environment; Mathematics teachers should enhance their personality traits and teaching skills that foster positive study habits and interest among the students towards learning Mathematics; Mathematics teachers should also

use appropriate and varied instructional materials and methods that suit the needs and preferences of the students and that stimulate their interest and curiosity in Mathematics; Parents should encourage and support their children in learning Mathematics by providing them with a comfortable and quiet study space at home, helping them with their assignments and projects, and motivating them to do their best; Students should develop and maintain positive study habits and interest in learning Mathematics by setting realistic and attainable goals, managing their time and resources effectively, reviewing and practicing their lessons regularly, and seeking help when needed; And future researchers should also investigate the effects of learning Mathematics on the students' academic achievement, career choices, and personal development.

Keywords: *Learning Mathematics, study habits, teaching skills, instructional materials*

INTRODUCTION

Mathematics was a fundamental subject that has been a cornerstone of education for centuries**.** In the human experience, mathematics holds paramount significance. It may be difficult to express anything in the world if mathematical expertise was lacking. Modern Mathematics was widely recognized yet worthless locally. Since the ancient times, Mathematics has been acknowledged as a crucial component of formal education. History demonstrates that early academics created Mathematics by practically solving daily problems. Mathematical development in antiquity was facilitated by outstanding shepherds. The totality of knowledge in science and technology was known as Mathematics (Bed Raj Archarya, et al., 2017). Mathematics was a study of magnitude and number that was highly applicable to almost every discipline. This was because all academic subjects used it to forecast results and solve issues. To conduct domestic and commercial transactions, conduct scientific research, develop technology, solve issues, and make decisions in a range of life situations, a person or a country must be knowledgeable in mathematics.

The belief that "Math is for Males" has played a role in the low number of women in the scientific, engineering, and mathematics fields. There was a common misperception that adult males were the only ones who could benefit from mathematics worldwide (Cvencek et al., 2015). Moreover, boys and girls identify differently in terms of their talents and interests from a very young age due to social perceptions regarding gender and arithmetic prowess (Cvencek et al., 2011). Additionally, by affecting their interests and self-perceptions of their capacity to carry out tasks related to the subject, this may also mediate their learning in the area (Beilock et al., 2010). As stated by Pajares & Schunk (2001) and Farrington et al. (2012), students' self-perceptions of their academic talents are significant because they can affect the amount of effort they put out to accomplish tasks, which helps them adjust to school responsibilities and obligations. Students are more likely to excel in a subject than not if they believe they are excellent in

it, according to Correll (2001). Students who lack the motivation to complete assignments will perform poorly academically (Pintrich, 2000; Ryan). As a result, their academic performance benefits from this. According to Khalaila (2015), more academic achievement was thus closely correlated with a good academic self-concept. As a result, the majority of research suggests that men have a more favorable perception of themselves in mathematics than do women (Kamoru & Ramon, 2017). Additionally, studies show that girls do better than boys on standardized math exams, which are particular evaluations meant to determine students' comprehension and mastery of the subject (Ganley et al., 2013; Spencer et al., 1999). Even though a vast amount of research shows that guys perform better in arithmetic than girls, further research is needed to confirm or refute these findings.

Mathematics has been difficult for the Mabini-NHS school administration and Math teachers to evaluate the poor performance of the kids in the subject. The average mean percentile score (MPS) for the previous three academic years was 54.97, falling short of the 75% passing requirement set by the Department of Education. The MPS dropped to 43.54% in the most recent semester, which raised questions about the students' future. Three primary elements were found when a researcher examined the variables influencing students' success in mathematics: factors related to the students (such as student attitude), factors related to the home (such as family history, education, occupation, and socioeconomic level), and factors related to the teachers (such as teacher effectiveness). Since students' attitudes can shape personal traits that affect their academic success, understanding students' attitudes was essential to understanding students' achievement in Mathematics. Higher achievement and more effort can result from having a positive attitude about the subject. The child's family history, which includes their education, occupation, social-economic standing, and socialization facilities, was one element that was associated to the home. Teachers are the intermediaries between information, values, and skills; hence they are vital in directing students' learning.

Improving the students' capacity to study mathematics required addressing these issues. To establish an atmosphere that inspires students to enjoy mathematics and gives them the tools and resources they need to succeed, educators, parents, and legislators must collaborate. Students who accomplish this will have a solid foundation in mathematics, be able to overcome their fear and anxiety, and grow to love the subject for the rest of their lives.

Learners of mathematics in senior high schools in Jolo are not exempt from the elements that influence the previously described factors. As a result, this study is being done among senior high school students at Notre Dame of Jolo College who are learning the language of mathematics. It gathered actual data to support or refute the extent of aspects related to language learning in mathematics.

Research Questions

This study was set to examine the factors affecting learning Mathematics among Grade 11 students of Notre Dame of Jolo College Senior High School.

Specifically, the following problems was systematically answered:

1. What is the demographic profile of Grade 11 students in Notre Dame of Jolo College Senior High School in terms of:

    1.1. Age;
    1.2. Gender;
    1.3. Strand;
    1.4. Parents' highest educational attainment,
    1.5. and parents' average monthly income?

2. What is the extent of factors affecting learning Mathematics among Grade 11 students in Notre Dame of Jolo College Senior High School in the context of:

    2.1. Learner-related factors:
    2.1.1. Interest, and
    2.1.2. Study Habits

2.2. Teachers-related factors:

    2.2.1. Personality Traits;
    2.2.2. Teaching Skills, and
    2.2.3. Instructional Materials

2.3. Home-related factor?

3. Is there a significant difference in the extent of factors affecting learning Mathematics among Grade 11 students in Notre Dame of Jolo College Senior High School when data are grouped according to their demographic profile?

4. Is there a significant correlation among the sub-categories subsumed under the extent of factors affecting learning Mathematics among Grade 11 students in Notre Dame of Jolo College Senior High School?

METHODOLOGY

Research Design

A quantitative research strategy and a descriptive-correlational research design were employed in this study. Research design is the blueprint or road map that directs an investigator in achieving their aims and objectives for the study, according to Babbie and Mouton (2001: p. 75). The study aims to characterize, measure, and draw conclusions about the phenomenon of mathematics learning, the variables that influence math learners, and the significant relationships and variations in these variables when data are sorted according to age, gender, parents' average monthly income, and level of education. Bless and Higson-Smith (1995: p. 63) defined a research plan as "a program that guides a researcher in collecting, analyzing, and interpreting observed facts."

Research Locale

This study was conducted at Notre Dame of Jolo College- Senior high school during the School Year 2023-2024. This secondary school was located in Jolo which was the capital town of Sulu Province.

Respondents of the Study

The respondents of the study were the grade 11 students of Dame of Jolo College Senior High School. A total respondent of (at least 100).

Sampling Design

Stratified random sampling was used to get the percentage per strata on grade 11 students. That is, due to access and availability, representative samples Notre Dame of Jolo College-Senior High School were randomly chosen. Subsequently, the fish bowl technique was employed to choose respondents based on grade level by simple random sampling, ensuring that the appropriate amount of data for this study was collected.

Table 1. Total Population of Respondents

STRAND	Population	Sampling Proportion	Sample
ABM	30	15%	5
GAS	202	15%	30
STEM	215	15%	32
HE CG	180	15%	27
BTF	20	15%	3
ICT	20	15%	3
TOTAL	465	90%	100

Data Gathering Procedure

In the collection of data, this study applied the following steps:
1) NDJC Senior High School coordinators and principals' offices provided permission to administer the questionnaire.
2) A consent from the respondents before administering the questionnaire and,
3) The researcher carried out the launch, administration, and retrieval of the questionnaire in person.

Research Instrument

The purposes of the study and the types of data call for necessitate the used of survey as the major data gathering instruments. This research study used a standardized questionnaire developed by **Jennilyn F. Balbalosa** and was used on her research paper entitled "**Factors Affecting Mathematics Performance of Laboratory High School Students at laguna State Polytechnic University**". The questionnaire was used because of its appropriateness for gathering quantitative information on perceptions. The instrument used a Likert Scale. This type of scale measures attitude by asking study participants to respond to a series of statements about a certain topic. Frequency and percentage was used for the first section of the survey questionnaire asking for the profile of the students. The second part dealt with the collection of data on the extent of factors affecting learning Mathematics among Grade 11 students in Notre Dame of Jolo College Senior High School.

Statistical Treatment

Statistical tools that were both descriptive and inferential were used to process the data collected for this study, namely:

1.) For Research Question Number 1: The profile of the responders was ascertained by using frequency counts and percentages.

2) For Research Question No. 2, the mean and standard deviation were used to ascertain the extent to which certain factors affecting the mathematics learning of Grade 11 students at Notre Dame of Jolo College Senior High School.

3) Regarding Research Question Number 3, when data are grouped by gender, the t-test for independent samples is used to find the significant difference in the extent of factors affecting learning mathematics among Grade 11 students at Notre Dame of Jolo College Senior High School. Analysis of Variance (ANOVA) is used to determine the remaining profiles.

4) Regarding Research Question Number 4, the significant correlation between the sub-categories subsumed by the extent of factors influencing mathematics learning among Grade 11 students at Notre Dame of Jolo College Senior High School was ascertained using Pearson's r.

RESULTS AND DISCUSSION

1. What is the demographic profile of Grade 11 students in Notre Dame of Jolo College Senior High School in terms of 1.1 age, 1.2 gender, 1.3 strand, 1.4 parents' highest educational attainment, and 1.5 parents' average monthly income?

1.1 In terms of Age

Table 1.1 presents the demographic profile of the student-respondents in terms of age. The table indicates that out of 100 student-respondents, it highly concentrated in the 16-17 years old group which makes up 92% (92), while 15 years old and below, and 18 years old and above account for 3% (3) and 5% (5), respectively. This implies that most of the student-respondents are in the typical age range for senior high school and that there are fewer students who are younger or older than the average.

Table 1.1 Student-respondents' demographic profile in terms of age.

Age	Number of Respondents	Percent
15 years old and below	3	3%
16-17 years old	92	92%
18 years old and above	5	5%
Total	**100**	**100%**

1.2 In terms of Gender

Table 1.2 presents the demographic profile of the student-respondents in terms of gender. The table indicates that out of 100 student-respondents, it skewed toward females who make up 62% (62), while males account for 38% (38). This implies a higher participation or representation of female student-respondents in the surveyed group.

Table 1.2 Student-respondents' demographic profile in terms of gender.

Gender	Number of Respondents	Percent
Male	38	38%
Female	62	62%
Total	**100**	**100%**

1.3 In terms of Strand

Table 1.3 presents the demographic profile of the student-respondents in terms of strand. The table indicates that out of 100 student-respondents, STEM has the highest number of respondents who make up 32% (32), followed by GAS account for 30% (303), and HE CG account for 27% (27). ABM, ICT, and BTF have significantly fewer respondents accounting for 5% (5), 3% (3), and 3% (3), respectively. **This implies that the surveyed group is more inclined toward the STEM strand, as well as the GAS strand and the HE-CG strand.**

Table 2.3 Student-respondents' demographic profile in terms of strand.

Strand	Number of Respondents	Percent
STEM	32	32%
GAS	30	30%
HE CG	27	27%
ABM	5	5%
ICT	3	3%
BTF	3	3%
Total	**100**	**100%**

1.4 In terms of Parents' Highest Educational Attainment

Table 1.4 presents the demographic profile of the student-respondents in terms of their parents' highest educational attainment. The figure shows that, of the 100 student respondents, 62% (62) had college degrees, and 17% (17) have master's degrees. These parents make up a sizable majority of the respondents. This suggests that the majority of kids come from households with greater access to learning materials, which may have an impact on how well they perform academically.

Table 1.4 Student-respondents' demographic profile in terms of parents' highest educational attainment.

Parents' Highest Educational Attainment	Number of Respondents	Percent
No formal education	4	4%
Elementary graduate	3	3%
High school graduate	9	9%
College graduate	62	62%
Master's degree	17	17%
Doctorate degree	3	3%
Vocational degree	2	2%
Total	**100**	**100%**

1.5 In terms of Parents' Average Monthly Income

Table 1.5 presents the demographic profile of the student-respondents in terms of their parents' average monthly income. The table indicates that out of 100 student-respondents, a light majority of 23% (23) have parents whose average monthly income ranges from 10,001 to 15,000, followed by 22% (22) each for those who have parents earning from 5,001 to 10,000 and from 15,001 to 20,000. Only 14% (14) have parents earning 5,000 or less, and 19% (19) have parents earning more than 20,001. This implies that most of the students who comprise 67% come from households with an average monthly income between 5,001 and 20,000 which belong to the low to middle income class.

Table 1.5 Student-respondents' demographic profile in terms of parents' average monthly income.

Parents' Average Monthly Income	Number of Respondents	Percent
5,000 and below	14	14%
5,001 to 10,000	22	22%
10,001 to 15,000	23	23%
15,001 to 20,000	22	22%

20,001 and above	19	19%
Total	**100**	**100%**

2. What is the extent of factors affecting learning Mathematics among Grade 11 students in Notre Dame of Jolo College Senior High School in the context of 2.1 Learner-related factors: 2.1.1 Interest, and 2.1.2 Study Habits, 2.2 Teacher-related factors: 2.2.1 Personality Traits, 2.2.2 Teaching Skills, and 2.2.3 Instructional Materials, and 2.3 Home-related factor?

2.1 In terms of Learner-related factors:

2.1.1 Interest

Table 2.1.1 shows the extent of learner-related factors, specifically interest, affecting learning Mathematics among Grade 11 students in Notre Dame of Jolo College Senior High School. The result shows that the total mean score is 4.06, which indicates an overall rating of “Often”. This means that on average, the student-respondents often show interest in learning Mathematics. The total standard deviation is 0.5129, which indicates that there is some variation among the student-respondents in their interest level.

The mean scores indicate that student-respondents often make themselves prepared for the math subject, always listen attentively and want to get good grades, but sometimes get frustrated or actively participate in discussions. The highest mean score is 4.73, which corresponds to the statement “I want to get good grades on test, quizzes, assignments, and projects.” This implies that the student-respondents have a high **achievement motivation** in learning Mathematics. The lowest mean score is 3.37, which corresponds to the statement “I get frustrated when the discussion is interrupted, or the teacher is absent.” This implies that the student-respondents are not comfortable with situations that are unclear when learning Mathematics.

Table 2.1.1Extent of factors affecting learning Mathematics among Grade 11 students in the context of Learner-related factor: interest

Statements	Mean	SD	Rating
1. I make myself prepared for the math subject.	4.08	.907	Often
2. I listen attentively to the lecture of my math teacher.	4.64	.578	Always
3. I actively participate in the discussion, answering exercises and/or clarifying things I did not understand.	3.48	1.020	Sometimes

4. I want to get good grades on test, quizzes, assignments, and projects.	4.73	.617	Always
5. I get frustrated when the discussion is interrupted, or the teacher is absent.	3.37	1.143	Sometimes
Total	**4.06**	**.5129**	Often

Legend: 4.50-5.00 = Always (A), 3.50-4.49 = Often (O), 2.50-3.49 = Sometimes (S), 1.50-2.49 = Rarely (R), 1.00-1.49 = Never (N)

2.1.2 Study Habits

Table 2.1.2 shows the extent of learner-related factors, specifically study habits, affecting learning Mathematics among Grade 11 students in Notre Dame of Jolo College Senior High School. The result shows that the total mean score is 4.02, which indicates an overall rating of “Often”. This means that on average, the student-respondents often practice positive study habits in learning Mathematics. The total standard deviation is 0.6021, which indicates that there is some variation among the student-respondents in their study habits.

Table 2.1.2 Extent of factors affecting learning Mathematics among Grade 11 students in the context of Learner-related factor: Study habits

Statements	Mean	SD	Rating
1. I do my assignments regularly.	4.40	.853	Often
2. I exert more effort when I do difficult assignments.	4.26	.917	Often
3. I spend my vacant time in doing assignments or studying my lessons.	3.39	1.109	Sometimes
4. I study the lessons I missed if I was absent from the class.	3.92	1.098	Often
5. I study and prepared for quizzes and tests.	4.34	.807	Often
6. I study harder to improve my performance when I get low grades.	4.48	.797	Often
7. I spend less time with my friends during school days to concentrate more on my studies.	3.56	.957	Often

8. I prefer finishing my studying and my assignments first before watching any television program.	3.75	1.058	Often
9. I see to it that extracurricular activities do not hamper my studies.	3.89	.920	Often
10. I have a specific place to study at home which I keep clean and orderly.	4.20	.995	Often
Total	**4.02**	**.6021**	Often

2.2 In terms of Teacher-related factors:

2.2.1 Personality Traits

Table 2.2.1 shows the extent of teacher-related factors, specifically personality traits, affecting learning Mathematics among Grade 11 students in Notre Dame of Jolo College Senior High School. The result shows that the total mean score is 4.62, which indicates an overall rating of “Always”. This means that on average, the student-respondents always agree that their math teacher has positive personality traits that affect their learning of Mathematics. The total standard deviation is 0.4672, which indicates that there is less variation among the student-respondents in their agreement with the statements.

Table 2.2.1 Extent of factors affecting learning Mathematics among Grade 11 students in the context of Teacher-related factor: Personality Traits

Statements	Mean	SD	Rating
1. My math teach has a good relationship with the students and teachers.	4.74	.630	Always
2. My math teach shows smartness, confidence, and firmness in making decisions.	4.78	.524	Always
3. My math teach imposes proper discipline and is not lenient in the following the prescribed rules.	4.34	.987	Often
4. My math teach has an appealing personality with good sense of humor.	4.54	.717	Always
5. My math teach is open to suggestions and opinions and is worthy of praise.	4.69	.581	Always

Total	**4.62**	**.4672**	Always

2.2.2 Teaching Skills

Table 2.2.2 shows the extent of teacher-related factors, specifically teaching skills, affecting learning Mathematics among Grade 11 students in Notre Dame of Jolo College Senior High School. The result shows that the total mean score is 4.53, which indicates an overall rating of “Always”. This means that on average, the student-respondents always agree that their math teacher has positive teaching skills that affect their learning of Mathematics. The total standard deviation is 0.5079, which indicates that there is less variation among the student-respondents in their agreement with the statements.

Table 2.2.2 Extent of factors affecting learning Mathematics among Grade 11 students in the context of Teacher-related factor: Teaching Skills

Statements	Mean	SD	Rating
1. My math teach explains the objectives to the lesson clearly at the start of each period.	4.60	0.682	Always
2. My math teach has mastery of the subject matter.	4.74	0.613	Always
3. My math teach is organized in presenting subject matters by systematically following course outline.	4.59	0.668	Always
4. My math teach is updated with present trends, relevant to the subject matter.	4.46	0.797	Often
5. My math teach uses various strategies, teaching aids/devices and techniques in presenting the lessons.	4.27	1.004	Often
Total	**4.53**	**.5079**	Always

2.2.3 Instructional Materials

Table 2.2.3 shows the extent of teacher-related factors, specifically instructional materials, affecting learning Mathematics among Grade 11 students in Notre Dame of Jolo College Senior High School. The result shows that the total mean score is 4.004, which indicates an overall rating of “Often”. This means that on average, the student-respondents often agree that their math teacher uses various instructional materials that affect their learning of Mathematics. The total standard deviation is 0.7214, which indicates that there is some variation among the student-respondents in their agreement with the statements.

The mean scores indicate that their math teacher often uses workbooks/textbooks, and articles related to mathematics, uses materials for project development, always uses chalk and blackboard in explaining the lessons, but sometimes uses PowerPoint presentations (visual aids). The highest mean score is 4.71, which corresponds to the statement “My math teach uses chalk and blackboard in explaining the lessons.” This implies that the student-respondents have a high preference for their math teacher’s use of chalk and blackboard as they rate him/her always on this aspect. The lowest mean score is 3.41, which corresponds to the statement “My math teach uses PowerPoint presentations (visual aids).” This implies that the student-respondents have a moderate preference for their math teacher’s use of PowerPoint presentations as you rate him/her sometimes on this aspect.

Table 2.2.3 Extent of factors affecting learning Mathematics among Grade 11 students in the context of Teacher-related factor: Instructional Materials

Statements	Mean	SD	Rating
1. My math teach uses chalk and blackboard in explaining the lessons.	4.71	0.64	Always
2. My math teach uses workbooks/textbooks.	4.15	1.029	Often
3. My math teach uses PowerPoint presentations (visual aids).	3.41	1.571	Sometimes
4. My math teach uses articles related to mathematics.	3.94	1.246	Often
5. My math teach uses materials for project development.	3.81	1.187	Often
Total	**4.004**	**.7214**	Often

2.3 In terms of Home-related factors:

Table 2.3 shows the extent of home-related factors, affecting learning Mathematics among Grade 11 students in Notre Dame of Jolo College Senior High School. The result shows that the total mean score is 3.71, which indicates an overall rating of “Often”. This means that on average, the student-respondents often agree that home-related factors affect their learning of Mathematics. The total standard deviation is 0.6251, which indicates that there is some variation among the student-respondents in their agreement with the statements.

The mean scores indicate that student-respondents often use learning materials suitable for their learning, ask for guidance from elders and/or family, do many household chores, get to disturb when using gadgets while studying, have family experience in

financial problem, always motivated by their parents to improve their studies, but sometimes ask for help in their homework, easily get distracted by their friends, get disturb by their siblings, and rarely have tutorial sessions after class. The highest mean score is 4.66, which corresponds to the statement “I am motivated by my parents to improve my studies.” This implies that the student-respondents have a high level of parental support as they rate them always on motivating them to improve their studies. The lowest mean score is 2.38, which corresponds to the statement “I have tutorial sessions after class.” This implies that the student-respondents have a low level of tutorial support as they rate them rarely on having tutorial sessions after class.

Table 2.3 Extent of factors affecting learning Mathematics among Grade 11 students in the context of Home-related factor

Statements	Mean	SD	Rating
1. I am motivated by my parents to improve my studies.	4.66	.655	Always
2. I use learning materials (book, dictionary, and laptop) suitable for my learning.	4.30	.980	Often
3. I have tutorial sessions after class.	2.38	1.462	Rarely
4. I ask for help in my homework.	3.41	1.422	Sometimes
5. I ask for guidance from elders and/or family.	3.50	1.453	Often
6. I easily get distracted by my friends.	3.47	1.259	Sometimes
7. I do many household chores.	4.08	1.089	Often
8. I get disturb by my siblings.	3.38	1.347	Sometimes
9. I get to disturb when using mobile phone/television/radio/gadgets while studying my lessons.	4.23	1.033	Often
10. I have family experience in financial problem.	3.66	1.224	Often
Total	**3.71**	**.6251**	Often

3. Is there a significant difference in the extent of factors affecting learning Mathematics among Grade 11 students in Notre Dame of Jolo College Senior High School when data are grouped according to 3.1 age, 3.2 gender, 3.3 strand, 3.4 parents' highest educational attainment, and 3.5 parents' average monthly income?

3.1 According to Age

Table 3.1 shows, broken down by age category, how several factors affect the degree to which Grade 11 students at Notre Dame of Jolo College Senior High School learn mathematics. The elements include those that are specific to the student (such as interest and study habits), the teacher (such as personality traits, teaching skills, and instructional materials), and the home environment. The table demonstrates that, at alpha 0.05, none of the factors' F-values or probability values are significant. This means that the perceptions of student-respondents aged 15 and below on the extent of these factors do not differ from those of student-respondents aged 16–17 and 18 and above, or vice versa. This implies that the student-respondents perceive the extent of factors affecting learning Mathematics in the same way regardless of their age. Therefore, the hypothesis which states that, "There is no significant difference in the extent of factors affecting learning Mathematics among Grade 11 students in Notre Dame of Jolo College Senior High School when data are grouped according to age." is accepted.

Table 3.1 Difference in the extent of factors affecting learning Mathematics among Grade 11 students when data are grouped according to age.

Sources of Variation		*Sum of Squares*	df	Mean Square	F	Sig.	Description
Interest	Between Groups	.610	2	.305	1.164	.317	Not Significant
	Within Groups	25.430	97	.262			
	Total	26.040	99				
Study Habits	Between Groups	.764	2	.382	1.055	.352	Not Significant
	Within Groups	35.130	97	.362			
	Total	35.894	99				
Personality Traits	Between Groups	.522	2	.261	1.200	.306	Not Significant
		21.086	97	.217			
		21.608	99				

	Within Groups						
	Total						
Teaching Skills	Between Groups	.535	2	.268	1.038	.358	Not Significant
	Within Groups	25.002	97	.258			
	Total	25.538	99				
Instructional Materials	Between Groups	.545	2	.273	.519	.597	Not Significant
	Within Groups	50.973	97	.525			
	Total	51.518	99				
Home-related Factors	Between Groups	.529	2	.265	.673	.513	Not Significant
	Within Groups	38.156	97	.393			
	Total	38.685	99				

*Significant at alpha 0.05

3.2 According to Gender

Table 3.2 presents the difference in the extent of various factors affecting learning Mathematics among Grade 11 students in Notre Dame of Jolo College Senior High School, grouped according to gender. The factors include learner-related factors (Interest and Study Habits), teacher-related factors (Personality Traits, Teaching Skills, and Instructional Materials), and home-related factors. The table shows that the mean difference and probability values for all factors are not significant at alpha 0.05. This means that the extent of these factors does not affect the perceptions of male and female student-respondents differently. This implies that the student-respondents perceive the extent of factors affecting learning Mathematics in the same way regardless of their gender. Therefore, the hypothesis which states that, “There is no significant difference in the extent of factors affecting learning Mathematics among Grade 11 students in Notre Dame of Jolo College Senior High School when data are grouped according to gender.” is accepted.

Table 3.2 Difference in the extent of factors affecting learning Mathematics among Grade 11 students when data are grouped according to gender.

Variables	Grouping	*Mean*	SD	Mean Difference	*t*	Sig.	Description
Interest	Male	4.053	0.555	-.0119	-.112	.911	Not Significant
	Female	4.065	0.490				
Study Habits	Male	3.974	0.704	-.0731	-.587	.558	Not Significant
	Female	4.047	0.534				
Personality Traits	Male	4.521	0.587	-.1564	-1.47	.146	Not Significant
	Female	4.677	0.368				
Teaching Skills	Male	4.474	0.512	-.0941	-.898	.371	Not Significant
	Female	4.568	0.506				
Instructional Materials	Male	4.095	0.775	.1463	.985	.327	Not Significant
	Female	3.948	0.687				
Home-related Factors	Male	3.776	0.661	.1118	.867	.388	Not Significant
	Female	3.665	0.603				

*Significant at alpha 0.05

3.3 According to Strand

Table 3.3 presents the difference in the extent of factors affecting learning Mathematics among Grade 11 students in Notre Dame of Jolo College Senior High School when data are grouped according to strand. The factors include learner-related factors (Interest and Study Habits), teacher-related factors (Personality Traits, Teaching Skills, and Instructional Materials), and home-related factors. The table shows that the F-values and probability values for all factors, except for teaching skills among teacher-related factors, and home-related factors, are significant at alpha 0.05. This means that the perceptions of STEM student-respondents on the extent of these factors differ from those of GAS, and HE CG, or vice versa, as shown in table 3.3.1. However, there is no significant difference in the perception of teaching skills, and home-related factors among the strands. This implies that the student-respondents perceive the extent of factors affecting learning Mathematics differently depending on their strand, except for teaching skills, and home-related factors. Therefore, the hypothesis which states that, “There is no

significant difference in the extent of factors affecting learning Mathematics among Grade 11 students in Notre Dame of Jolo College Senior High School when data are grouped according to strand." is rejected.

Table 3.3 Difference in the extent of factors affecting learning Mathematics among Grade 11 students when data are grouped according to strand.

Sources of Variation		*Sum of Squares*	df	Mean Square	F	Sig.	Description
Interest	Between Groups	3.281	5	.656	2.71*	.025	Significant
	Within Groups	22.759	94	.242			
	Total	26.040	99				
Study Habits	Between Groups	4.663	5	.933	.281*	.021	Significant
	Within Groups	31.231	94	.332			
	Total	35.894	99				
Personality Traits	Between Groups	2.9	5	.580	.291*	.017	Significant
	Within Groups	18.708	94	.199			
	Total	21.608	99				
Teaching Skills	Between Groups	2.161	5	.432	1.74	.134	Not Significant
	Within Groups	23.377	94	.249			
	Total	25.538	99				
Instructional Materials	Between Groups	8.425	5	1.685	3.68*	.004	Significant
	Within Groups	43.093	94	.458			
	Total	51.518	99				

Home-related Factors	Between Groups	2.409	5	.482 .386	1.25	.293	Not Significant
	Within Groups	36.276	94				
	Total	38.685	99				

*Significant at alpha 0.05

A Post Hoc Analysis using Tukey test is used when data are grouped based on the demographic profile of the students in terms of strand. This is done to find out which groups, categorized based on age, have varying means in terms of interest and study habits under learner-related factors, personality traits and instructional materials under teacher-related factors.

On interest under Learner-related factors: It demonstrates that, when compared to HE CG student respondents, STEM student respondents received a mean difference of.37639* with a Standard Error of.12858 and a p-value of.048 that is significant at alpha 0.05.

On study habits under Learner-related factors: It demonstrates that, when compared to HE CG student respondents, STEM student respondents received a mean difference of.31331* with a Standard Error of.15063 and a p-value of.007, which is significant at alpha 0.05.

On personality traits under Teacher-related factors: The data indicates that among GAS student responders, STEM students obtained a mean difference of.37083* with a Standard Error of.11337 and a p-value of.018 that is significant at alpha 0.05.

On instructional materials under Teacher-related factors: The data indicates that STEM students who responded had a mean difference of.70000* over HE CG students, with a Standard Error of.17693 and a p-value of.002, which is significant at alpha 0.05.

Table 3.3.1 Multiple ***comparison of Factors Affecting Mathematics Learning by Strand***

Dependent Variable	**(I) Grouping by Age**	***(J) Grouping Age***	**Mean Difference (I – J)**	**Std. Error**	**Sig.**
Interest	STEM	GAS	.34750	.12505	.070
		HE CG	**.37639***	.12858	.048
		ABM	.32750	.23662	.736

		ICT	-.17917	.29711	.991
		BTF	.35417	.29711	.840
		GAS	.33813	.14648	.201
		HE CG	**.31331***	.15063	.007
Study Habits	STEM	ABM	.68813	.27719	.140
		ICT	-.43854	.34804	.806
		BTF	.06146	.34804	1.000
		GAS	**.37083***	.11337	.018
		HE CG	.05602	.11658	.997
Personality Traits	STEM	ABM	-.02250	.21453	1.000
		ICT	-.19583	.26937	.978
		BTF	.00417	.26937	1.000
		GAS	.27333	.17207	.608
		HE CG	**.70000***	.17693	.002
Instructional Materials	STEM	ABM	.58000	.32560	.483
		ICT	-.03333	.40883	1.000
		BTF	-.10000	.40883	1.000

*The mean difference is significant at the 0.05 level

3.4 According to Parents' Highest Educational Attainment

Table 3.4 presents the difference in the extent of factors affecting learning Mathematics among Grade 11 students in Notre Dame of Jolo College Senior High School when data are grouped according to parents' highest educational attainment. The factors include learner-related factors (Interest and Study Habits), teacher-related factors (Personality Traits, Teaching Skills, and Instructional Materials), and home-related factors. The table shows that the F-values and probability values for all factors, except for study habits under learner-related factors, instructional materials under teacher-related factors, and home-related factors, are significant at alpha 0.05. This means that the perceptions of student-respondents whose parents are college graduates on the extent of these factors differ from those whose parents are elementary graduates, hold master's degrees, and have no formal education, or vice versa, as shown in table 3.4.1. However, there is no significant difference in the perception of study habits, instructional materials, and home-related factors among the groups. This implies that the student-respondents

perceive the extent of factors affecting learning Mathematics differently depending on their parent's highest educational attainment, except for study habits, instructional materials, and home-related factors. Therefore, the hypothesis which states that, "There is no significant difference in the extent of factors affecting learning Mathematics among Grade 11 students in Notre Dame of Jolo College Senior High School when data are grouped according to parents' highest educational attainment." is accepted.

Table 3.4 Difference in the extent of factors affecting learning Mathematics among Grade 11 students when data are grouped according to parents' educational attainment.

Sources of Variation		*Sum of Squares*	df	Mean Square	F	Sig.	Description
Interest	Between Groups	3.686	6	.614	2.556	.025*	Significant
	Within Groups	22.354	93	.240			
	Total	26.040	99				
Study Habits	Between Groups	3.574	6	.596	1.714	.126	Not Significant
	Within Groups	32.320	93	.348			
	Total	35.894	99				
Personality Traits	Between Groups	3.324	6	.554	2.818	.015*	Significant
	Within Groups	18.284	93	.197			
	Total	21.608	99				
Teaching Skills	Between Groups	5.832	6	.972	4.588	.000*	Significant
	Within Groups	19.705	93	.212			
	Total	25.538	99				
Instructional Materials	Between Groups	4.814	6	.802	1.598	.157	Not Significant
	Within Groups	46.704	93	.502			
	Total	51.518	99				
Home-related Factors	Between Groups	1.779	6	.296	.747	.613	Not Significant
	Within Groups	36.906	93	.397			

Total	38.685	99	

*Significant at alpha 0.05

The study employed a Post Hoc Analysis using Tukey test to determine which groups classified according to parents' highest educational attainment have different levels of mean in the areas of personality traits, teaching skills, and the degree of interest under learner-related factors, personality traits under teacher-related factors, and so on. The data were grouped based on the demographic profile of the respondents and students.

On interest under Learner-related factors: According to the data, there was a mean difference of.92059*, a Standard Error of.27245, and a p-value of.018 between student respondents who did not possess a master's degree and those who did. At alpha 0.05, this difference is significant.

On personality traits under Teacher-related factors: The information shows that, in comparison to respondents whose parents have completed elementary school, student respondents without formal education have a mean difference of -1.08333* with a Standard Error of.33865 and a p-value of.030; in contrast, respondents whose parents have completed high school have a mean difference of -.97222* with a Standard Error of.24640 and a p-value of.008; in comparison, respondents whose parents have completed college have a mean difference of -.76290* with a Standard Error of.22874 and a p-value of.020; and respondents who possess a master's degree have a mean difference of -.82059* with a Standard Error of.24640 and a p-value of.021 in comparison to those who have finished college. At alpha 0.05, each of these deviations is significant.

On teaching skills under Teacher-related factors: According to the data, there is a significant difference at alpha 0.05 between student respondents whose parents have no formal education and those whose parents have a college degree (mean difference = -.76129*, standard error =.23746, p-value =.029, and mean difference = -.89412*, standard error =.25580, p-value =.012).

Table 3.4.1 multiple *comparison of Factors Affecting Mathematics Learning by parents' highest educational attainment.*

Dependent Variable	(I) Grouping by Age	*(J) Grouping Age*	Mean Difference (I – J)	Std. Error	Sig.
Interest	No formal education	Elementary graduate	-1.11667	.37445	.054
		High school graduate	-.58333	.29462	.434

		College graduate	-.68226	.25292	.110
		Master's degree	**-.92059***	.27245	.018
		Doctorate degree	-.98333	.37445	.130
		Vocational degree	-.75000	.42459	.574
	No formal education	Elementary graduate	**-1.08333***	.33865	.030
		High school graduate	**-.97222***	.26645	.008
Personality Traits		College graduate	**-.76290***	.22874	.020
		Master's degree	**-.82059***	.24640	.021
		Doctorate degree	-.88333	.33865	.135
		Vocational degree	-.45000	.38399	.903
	No formal education	Elementary graduate	-.93333	.35157	.122
		High school graduate	-.77778	.27661	.084
Teaching Skills		College graduate	**-.76129***	.23746	.029
		Master's degree	**-.89412***	.25580	.012
		Doctorate degree	-.66667	.35157	.488
		Vocational degree	.50000	.39864	.871

*The mean difference is significant at the 0.05 level

3.5 According to Parents' Average Monthly Income

Table 3.5 shows the variation in the degree of factors influencing mathematics learning among Notre Dame of Jolo College Senior High School students in Grade 11 when the data are sorted by average monthly income of the parents. The elements include those that are specific to the student (such as interest and study habits), the teacher (such as personality traits, teaching skills, and instructional materials), and the home environment. The table demonstrates that, at alpha 0.05, none of the factors' F-values or probability values are significant. This means that the perceptions of student-respondents whose parents' average monthly income is between 10,001 to 15,000 on the extent of these factors do not differ from those whose parents' average monthly income is below 5,000, between 5,001 to 10,000, 15,001 to 20,000, and above 20,000, or vice

versa. This implies that the student-respondents perceive the extent of factors affecting learning Mathematics in the same way regardless of their parents' average monthly income. Therefore, the hypothesis which states that, "There is no significant difference in the extent of factors affecting learning Mathematics among Grade 11 students in Notre Dame of Jolo College Senior High School when data are grouped according to parents' average monthly income." is accepted.

Table 3.5 Difference in the extent of factors affecting learning Mathematics among Grade 11 students when data are grouped according to parents' average monthly income.

Sources of Variation		*Sum of Squares*	Df	Mean Square	F	Sig.	Description
Interest	Between Groups	1.713	4	.428	1.672	.163	Not Significant
	Within Groups	24.327	95	.256			
	Total	26.040	99				
Study Habits	Between Groups	.432	4	.108	.289	.884	Not Significant
	Within Groups	35.462	95	.373			
	Total	35.894	99				
Personality Traits	Between Groups	.317	4	.079	.353	.841	Not Significant
	Within Groups	21.291	95	.224			
	Total	21.608	99				
Teaching Skills	Between Groups	.192	4	.048	.180	.948	Not Significant
	Within Groups	25.345	95	.267			
	Total	25.538	99				
Instructional Materials	Between Groups	1.974	4	.493	.946	.441	Not Significant
	Within Groups	49.544	95	.522			
	Total	51.518	99				

Home-related Factors	Between Groups	1.546	4	.387	.989	.418	Not Significant
	Within Groups	37.139	95	.391			
	Total	38.685	99				

*Significant at alpha 0.05

4. Is there a significant correlation among the sub-categories subsumed under the extent of factors affecting learning Mathematics among Grade 11 students in Notre Dame of Jolo College Senior High School?

Table 4 shows the relationship between the subcategories included under the scope of factors influencing the mathematics learning of grade 11 students at Notre Dame of Jolo College Senior High School. The table indicates that all of the calculated Pearson correlation coefficients (Pearson r) between these variables are significant at alpha 0.05, with the exception of the correlations between interest, personality traits, and teaching skills and home-related factors. Particularly, Grade 11 pupils at Notre Dame of Jolo College Senior High School exhibit connections to varying degrees among the sub-categories that fall under the umbrella of factors influencing mathematics learning. These include:

1) Moderate positive correlations between Interest and Study Habits, Personality Traits, a low positive correlation between interest and Teaching Skills, and Instructional Materials.
2) Moderate positive correlations between study habits and teaching skills, instructional materials, and home-related factors, a low positive correlation between study habits and personality traits.
3) High positive correlations between personality traits and teachings skills, a low positive correlation between personality traits and instructional materials.
4) Moderate positive correlations between teaching skills and instructional materials.
5) Moderate positive correlations between instructional materials home-related factors.

This means that as one variable increases, the other variable also tends to increase, and that these relationships are not likely to be random. The strongest correlation is between Personality Traits and Teaching Skills ($r = 0.640$, $p < 0.01$), which implies that students who have favorable personality traits for learning Mathematics also tend to perceive their teachers' skills as high. The weakest correlation is between Interest and Home-related Factors ($r = 0.185$, $p = 0.065$), which suggests that students' interest in Mathematics is not strongly influenced by their home environment. The other correlations are not significant which means that there is no linear relationship between the variables.Therefore, the hypothesis which states that, "There is no significant

correlation among the sub-categories subsumed under the extent of factors affecting learning Mathematics among Grade 11 students in Notre Dame of Jolo College Senior High School." is rejected.

Table 4 Correlation among the sub-categories subsumed under the extent of factors affecting learning Mathematics among Grade 11 students.

Variables **Dependent**	**Independent**	**Pearson *r***	**Sig.**	**N**	**Description**
Interest	Study Habits	.463*	.000	100	Moderate
	Personality Traits	.353*	.000	100	Moderate
	Teaching Skills	.207*	.039	100	Low
	Instructional Materials	.266*	.008	100	Low
	Home-related Factors	.185	.065	100	Low
Study Habits	Personality Traits	.264*	.008	100	Low
	Teaching Skills	.323*	.001	100	Moderate
	Instructional Materials	.400*	.000	100	Moderate
	Home-related Factors	.409*	.000	100	Moderate
Personality Traits	Teaching Skills	.640*	.000	100	High
	Instructional Materials	.205*	.041	100	Low
	Home-related Factors	.150	.135	100	Low
Teaching Skills	Instructional Materials	.314*	.001	100	Moderate
	Home-related Factors	.079	.438	100	Very High
Instructional Materials	Home-related Factors	.420*	.000	100	Moderate

*Correlation coefficient is significant at alpha .05

Correlation Coefficient Scales Adopted from Hopkins, Will (2002):

0.0-0.1 = Nearly Zero; 0.1-0.3 = Low; 0.3-0.5 = Moderate; 0.5-0.7 = High; 0.7-0.9 = Very High; 0.9-1 = Nearly Perfect

Conclusions

The study concludes that:

1) The majority of student-respondents are ordinary seniors in high school, from low- to middle-class backgrounds, with bachelor's degree-holding parents.
2) Student-respondents have a positive study habits and interest towards learning Mathematics, which is influenced by their math teacher's personality, teaching skills, and instructional materials, as well as their home environment.
3) The student-respondents' gender, age, and parents' average monthly income have no significant influence on how they perceive the extent of factors affecting their learning of Mathematics among Grade 11 students in Notre Dame of Jolo College Senior High School, except for their strand and parents' highest educational attainment.
4) Student-respondents' interest, study habits, personality traits, teaching skills, and instructional materials are interrelated and influence each other in the process of learning Mathematics. The only exception is the home-related factors, which do not show a significant relationship with any of the other sub-categories.

Recommendations

This study recommends the following:

1) School heads should provide adequate support and resources for the mathematics teachers and students, such as hiring qualified and competent teachers, providing sufficient and updated instructional materials, and creating a conducive and stimulating learning environment.
2) Mathematics teachers should enhance their personality traits and teaching skills that foster positive study habits and interest among the students towards learning Mathematics.
3) Mathematics teachers should also use appropriate and varied instructional materials and methods that suit the needs and preferences of the students and that stimulate their interest and curiosity in Mathematics.
4) Parents should encourage and support their children in learning Mathematics by providing them with a comfortable and quiet study space at home, helping them with their assignments and projects, and motivating them to do their best.
5) Students should develop and maintain positive study habits and interest in learning Mathematics by setting realistic and attainable goals, managing their time and resources effectively, reviewing and practicing their lessons regularly, and seeking help when needed.
6) Future researchers should also investigate the effects of learning Mathematics on the students' academic achievement, career choices, and personal development.

Compliance with Ethical Standards

First and foremost, each participant received a thorough informed consent form outlining the study's objectives, procedures, possible benefits and hazards, and confidentiality guidelines. Moreover, in instances where the trial outcomes were unaffected by the respondents' personal details, every trial data point was meticulously anonymized. To protect participant privacy, data collection was done in a private setting, and the gathered information was stored in a safe archive that the researchers alone could access. Each member was respected in the same spirit even though their opinions and views differed. The researchers also tried to provide a friendly and safe space for the participants so they could discuss candidly about their experiences.

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FACTORS AFFECTING THE ABSENTEEISM OF PUPILS IN INTERMEDIATE LEVEL AT POBLACION ELEMENTARY SCHOOL INDANAN SOUTH DISTRICT

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ABSTRACT

This study is descriptive-quantitative research determining the extent of Factors Affecting the Absenteeism of Pupils in Intermediate Level at Población Elementary School Indanan South. Using the weighted mean, the standard deviation, the t-test for independent samples, one-way ANOVA and Pearson's r correlation test. The study's conclusions are as follows: 1 Of the 100 student respondents, the vast majority are female, between the ages of 11 and 12, and the majority have parents who earned just an elementary education and an average monthly income of 5,000 pesos or less. 2 Sub-categories subsumed under the extent of Factors Affecting the Absenteeism of Pupils in Intermediate Level at Población Elementary School Indanan South by the student-respondents in the context of Physical Factor, Health Factor and Classroom atmosphere is all rated as “neutral” with total weighted mean score of 2.77, 3.43, and 2.67 with standard deviation of 1.07381, 1.00065 and 1.16582 respectively. Additionally Sub-categories subsumed under the extent of Factors Affecting the Absenteeism Of Pupils In Intermediate Level At Población Elementary School Indanan South as perceived by the student-respondents in the context of Personal Attitude, Teacher-Related Factor and Home-Related Factor is all rated as “disagree” with total weighted mean score of 2.4467, 2.2733, 2.3667 with standard deviation of 1.12837, 1.08596, 1.06732 respectively by the student-respondents at Población Elementary School Indanan South Elementary School involved in this study. 3) Generally, there is no significant difference in the extent of Factors Affecting the Absenteeism of Pupils in Intermediate Level at Población Elementary School Indanan South when data are grouped according to their gender and Parents Average Monthly Income. Meanwhile, student-respondents perceived differently on the extent of Factors Affecting the Absenteeism of Pupils in Intermediate Level at Población Elementary School Indanan South when data are grouped according to their age and Parents educational attainment.4) Generally, the sub-categories subsumed the extent of Factors Affecting the

Absenteeism of Pupils in Intermediate Level at Población Elementary School Indanan South is highly correlated.

Keywords: *Absenteeism, Physical Factor, Health Factor, Personal Attitude, Teacher-Related Factor, Classroom Atmosphere; and Home-Related Factor, Descriptive Reseach.*

INTRODUCTION

Being absent from work or school without a valid reason is known as absenteeism. It can be a behavior or a habit. According to the Merriam-Webster definition, absentee students are those who do not consistently attend classes or schools. Additionally, student engagement is impacted by absenteeism. A large number of pupils miss school each day. Lack of perfect discipline both internally and externally is the definition of absenteeism given in the Principle of Education for Teachers in Africa (1995). He gives the impression that the students are unrestrained and do not function within their surroundings. These days, it is impossible to differentiate absence from those who were referred to as pupils. Teasley has found several risk factors that contribute to the high rate of student absenteeism in this country, such as family health, low income, poor school climate, transportation challenges, and community views about education.

The COVID-19 pandemic has had a significant impact on the nation's educational system. In private schools during the pandemic, there were an average of 25 million students enrolled, both from government and private schools, according to Belo 2020, the Department of Education. This represents a decrease of 3 million students from the pre-pandemic school year. The US Agency for International Development produced a research in November 2021 that states that during the beginning of the epidemic, the percentage of youth not in school rose from 17% in January 2020 to 25% three months later in April 2020. According to Liego (2016), If a student misses more than 20% of the scheduled classes during the academic year or term, they will receive a failing mark and no credit for the course or subject. Based on the DepEd Manual.

Not only is absence from school concerning to parents, teachers, and administrators, but it also poses a threat to society at large. Unexpected absences negatively impact peer relationships, which in turn may lead to more absences. As stated by (Davidson, Kirt, Wilson, and Malcolm 2003). According to DeSocio et al. (2007), students experience severe academic difficulties and fall far behind in their coursework. According to DeSocio et al. (2007), absenteeism has a negative impact on a student's ability to move on to the following grade and increases the likelihood that they will drop out.

Apart from the negative outcomes associated with student absences, there exist several other factors that also play a role in students' nonattendance. Unrecognized contributing factors to school absenteeism include bad weather and transportation issues.

The pupils might not be able to leave their homes due to severe weather conditions. Health issues are known to be a significant factor in student absenteeism; whether they are personal or family health concerns, they prevent students from attending class. While it is recommended that students avoid attending class when extremely ill, many do not go to school even for minor illnesses that do not interfere with their ability to study in the classroom (DeSocio et al., 2007).

The education system operates under the fundamental premise that pupils attend class on a daily basis. To learn, students need to be attentive and involved. Recent studies, however, have questioned this presumption (Chang, Bauer, & Byrnes, 2018). While some forms of truancy or absences have long been studied, school absenteeism was not regularly measured until recently (U.S. Department of Education, 2016a). The Every Students Succeeds Act (ESSA), which reauthorized federal education law in 2015, pushed states to prioritize student attendance as a reliable indicator of student performance and school quality (SQSS; Jordan & Miller, 2017). Furthermore, as mandated by ESSA, the state must disclose the number of pupils who consistently miss school from their report card. The US Department of Education's Civil Right statistics Collection (CRDC) discovered that about 8 million kids were chronically absent during the 2015–2016 school year, the most recent national statistics available (Chang, Bauer, Byrnes, 2018). Chronically absenteeism is defined as missing 15 or more days of school annually.

Research Questions

This study answered the following:

1. What is the demographic profile of the respondents in terms of:
    1.1 Age;
    1.2 Gender;
    1.3 Parents Educational attainment; and
    1.4 Parents Average Monthly Income?
2. What is the extent of the Factors Affecting the Absenteeism of pupils in intermediate level at Poblacion Elementary School Indanan South in terms of:
    2.1 Physical Factor;
    2.2 Health Factor;
    2.3 Personal Attitude;
    2.4 Teacher-Related Factor;
    2.5 Classroom Atmosphere; and
    2.6 Home-Related Factor?
3. Is there a significant difference in the extent of Factors Affecting the Absenteeism of pupils in Intermediate level at Poblacion Elementary School Indanan South in terms of: Physical factor, Health factor, Personal attitude, Teacher-related factor, and Classroom atmosphere, Home-related factor; when data are grouped according to their demographic profile in terms of;
    3.1 Age;
    3.2 Gender;
    3.3 Parents Educational Attainment; and

3.4 Parents Average Monthly Income?

4. Is there a significant correlation among the sub-categories subsumed under Factors Affecting the Absenteeism of pupils in Intermediate level at Poblacion Elementary School Indanan South.

METHODOLOGY

Research Design

This study was purely quantitative in nature. The data was analyzed using descriptive techniques. These are used to characterize the variables influencing the absenteeism of intermediate students and the problems faced by the faculty members. They also serve to ascertain whether there are any appreciable differences in the variables influencing the absenteeism of intermediate students based on their age, gender, parent's educational attainment, and parent's monthly income. This was also used to find the link between the subcategories when they were grouped by teacher-related factors, home-related factors, physical factors, health factors, and personal attitudes.

Research Locale

This study was conducted at Poblacion Elementary School Indanan South District - Sulu particularly at intermediate level. It has 8 faculty members and 6 volunteers and it has operated since 2007 with limited resources but had been producing competent graduates.

Respondents of the Study

Since this study was conducted to determine the factors affecting the absenteeism of pupils in intermediate level, therefore the respondents of this study are purely pupils of Poblacion Elementary School particularly from grade 4 to grade 6.

Distribution of respondents according to grade level.

Grade 4	35
Grade 5	25
Grade 6	40
Total	**100**

Sampling Design

The researcher used the purposive sampling technique to identify and select the 100 participants from the pupils of Poblacion Elementary School Indanan South District. The inclusion criteria was used in choosing the participants of the study in intermediate grades 4-6.

Data Gathering Procedure

The researcher seeked permission to the Dean of Graduate Study, after that to the respected advisers of grade 4, grade 5, and grade 6 level as well as the volunteers inside the class who handling the subject during the conduct, especially to the respected teacher in charge of Poblacion Elementary School. Right after the approval, the researcher disseminated the questionnaire to the respondents personally to avoid being bias during the survey. After at least 10 minutes for each respondent, the questionnaires were retrieved.

Research Instrument

The researcher utilized a standardized questionnaire patterned from Murcia, L (2010, November 15) about the factors affecting the absenteeism of pupils in intermediate level. The questionnaire consists of 2 parts.

Part one (1) deal with the demographic profile of the respondents which includes their age, gender, parent's educational attainment, and parents' average monthly income.

Part two (2) consists the factors affecting the absenteeism of pupils in intermediate level at Poblacion Elementary School. Their responses are categorized using the Likert scale to make it more convenient to answer and interpret.

Statistical Treatment of Data

The statistical treatment of data includes descriptive statistics, inferential statistics, and correlation analysis.

1. For problem number 1, the statistical tools used are frequency and percentage to determine the demographic profile of pupils in terms of age, gender, parent educational attainment and parent's average monthly income.

2. For problem number 2, the statistical tools used are mean, and standard deviation employed to identify the factors affecting the absenteeism of the pupils in intermediate level at Poblacion Elementary School Indanan South District.

3. For problem number 3, the statistical tools used are t-test and One-way Analysis of Variance (ANOVA) was used to determine the significant difference in the extend of factors affecting the absenteeism of pupils in intermediate level at Poblacion Elementary School Indanan South when data are grouped according to their demographic profile in terms of: age, gender, parents' educational attainment and parents average monthly income.

4. For problem number 4, the statistical tools used are Pearson Product-Moment Correlation to determine the significant correlation among the sub-categories subsumed under factors affecting the absenteeism of pupils in intermediate level at Poblacion Elementary School.

RESULTS AND DISCUSSION

1. What is the demographic profile of the respondents in terms of: 1.1 Age, 1.2 Gender, 1.3 Parents educational attainment; and 1.4 Parents Average Monthly Income?

1.1 In terms of Age

Table 1.1 presents the age distribution of the student respondents' demographic profile. From the table, it is evident that 45 (45.0%) of the 100 student respondents are between the ages of 10 and under, 50 (50.0%) are between the ages of 11 and 12, and 5 (5.0%) are 13 years of age and up. Half of all the student responders in this study are between the ages of 11 and 12, according to the findings. This further suggests that the majority of the study's student respondents fall into the middle age range as defined by the study.

Table 1.1 Demographic profile of student-respondents from Población Elementary School Indanan South in terms of age.

Age	Number of respondents	Percent
10 years old and below	45	45.0%
11-12 years old	50	50.0%
13 years old and above	5	5.0%
Total	**100**	**100%**

1.2 In terms of Gender

Table 1.2 demonstrates the gender-specific demographic profile of the student respondents. This table indicates that 40 (40.0%) of the 100 student responses are male and 60 (60.0%) are female. This survey shows that there are more than half as many female student respondents as there are male student respondents.This means that great majority of the student-respondents from Población Elementary School Indanan South are predominantly female.

Table 1.2 Demographic profile of student-respondents from Población Elementary School Indanan South in terms of gender.

Gender	Number of respondents	Percent
Male	40	40.0%
Female	60	60.0%
Total	**100**	**100%**

1.3 In terms of Parents educational attainment

Table 1.3 shows the demographic profile of student-respondents in terms of Parents educational attainment. It can be seen from this table that out of 100 student-respondents, 57 (57.0%) have parents who are Elementary graduate, 13 (13.0%) are high school graduate, 22 (22.0%) are college graduate, and 8 (8.0%) others. This study reveals that more than half of the total number of student-respondents' parents are elementary graduate. This implies that a significant portion of the parents' educational attainment of the student-respondents from Población Elementary School Indanan South have attained a lower level of education, with the majority being elementary graduates.

Table 1.3 Demographic profile of student-respondents from Población Elementary School Indanan South in terms of Parents educational attainment.

Parents educational attainment	Number of respondents	Percent
Elementary Graduate	57	57.0%
High School Graduate	13	13.0%
College Graduate	22	22.0%
Others	8	8.0%
Total	**100**	**100%**

1.4 In terms of Parents Average Monthly income

Table 1.4 shows the demographic profile of student-respondents in terms of Parents Average Monthly Income. It can be seen from this table that out of 100 student-respondents, 87 (87.0%) have 5,000 below average monthly income of parents, 12 (12.0%) have 5,001-10,000, and 1 (1.0%) have 10,001 above. This study shows that more than half of the total number of student-respondents have an average of 5,000 pesos and below of their parents' monthly income. This result implies that a large majority of the student-respondents come from families with relatively low average monthly incomes. Specifically, this indicates that many families may face financial constraints and challenges in meeting basic needs and expenses.

Table 1.4 Demographic profile of student-respondents from Población Elementary School Indanan South in terms of Parents Average Monthly Income.

Parents Average Monthly Income	Number of respondents	Percent
5,000 below	87	87.0%
5,001-10,000	12	12.0%
10,001 above	1	1.0%
Total	**100**	**100%**

2. What is the Factors Affecting the Absenteeism of Intermediate pupils at Poblacion Elementary School in terms of: 2.1 Physical Factor, 2.2 Health Factor, 2.3 Personal Attitude, 2.4 Teacher-Related Factor, 2.5 Classroom Atmosphere; and 2.6 Home-Related Factor?

2.1 In the context of Physical Factor

Table 2.1 shows the extent of Factors Affecting the Absenteeism of Pupils in Intermediate Level at Población Elementary School Indanan South in the context of Physical Factor. This category obtained a total weighted mean score of 2.77 with standard deviation of 1.07381 which is rated as “Neutral”. This result indicates that the students involved in this study affirmed that there is a Neutral effect on their Absenteeism at Población Elementary School Indanan South in the context of Physical Factor. This implies that the students perceive the physical factors as having neither a significant positive nor negative impact on their absenteeism.

Notably, student-respondents rated the following items as “**Neutral**”: “Our house is far from the school.”, and “Nobody accompanies me in going to school”.

Table 2.1 Extent of Factors Affecting the Absenteeism of Pupils in Intermediate Level at Población Elementary School Indanan South in the context of Physical Factor.

	Statements	**Mean**	**S.D**	**Rating**
1	Our house is far from the school.	3.26	1.685	Neutral
2	It is unsafe to go to school.	2.28	1.415	Disagree
3	Nobody accompanies me in going to school.	2.77	1.626	Neutral
Total Weighted Mean		**2.77**	**1.07381**	**Neutral**

Legend: (5) 4.50-5.00=Strongly Agree; (4) 3.50-4.49=Agree; (3) 2.50- 3.49=Neutral; (2) 1.50- 2.49=Disagree; (1) 1.00- 1.49=Strongly Disagree

2.2 In the context of Health Factor

Table 2.2 shows the extent of Factors Affecting the Absenteeism of Pupils in Intermediate Level at Población Elementary School Indanan South in the context of Health Factor. This category obtained a total weighted mean score of 3.43 with standard deviation of 1.00065 which is rated as “Neutral”. This result indicates that the students involved in this study affirmed that there is a Neutral effect on their Absenteeism at Población Elementary School Indanan South in the context of Health factor. This implies that students perceive health-related factors as having neither a significant positive nor negative impact on their absenteeism.

Notably, student-respondents rated the following items, among others as "**Neutral**": "I have toothache.", "My stomach hurts", and "I have headache."

Table 2.2 Extent of Factors Affecting the Absenteeism of Pupils in Intermediate Level at Población Elementary School Indanan South in the context of Health factor.

Statements		**Mean**	**S. D**	**Rating**
1	I have toothache	3.38	1.455	Neutral
2	My stomach hurts.	3.45	1.473	Neutral
3	I have headache.	3.45	1.520	Neutral
Total Weighted Mean		**3.43**	**1.00065**	**Neutral**

2.3 In the context of Personal attitude

Table 2.3 shows the extent of Factors Affecting the Absenteeism of Pupils in Intermediate Level at Población Elementary School Indanan South in the context of personal attitude. This category obtained a total weighted mean score of 2.45 with standard deviation of 1.12837 which is rated as "Disagree". This result indicates that the students involved in this study affirmed they do not perceive to have a significant effect on their absenteeism at Población Elementary School Indanan South in the context of personal attitude.

Notably, student-respondents rated the following items, among others as "**Disagree**": "I cannot concentrate in my studies.", and "I got fond of playing game with my cellphone."

Table 2.3 Extent of Factors Affecting the Absenteeism of Pupils in Intermediate Level at Población Elementary School Indanan South in the context of personal attitude.

Statements		**Mean**	**S. D**	**Rating**
1	I'm not interested in my studies.	2.56	1.585	Neutral
2	I cannot concentrate in my studies.	2.47	1.417	Disagree
3	I got fond of playing game with my cellphone.	2.31	1.549	Disagree
Total Weighted Mean		**2.45**	**1.12837**	**Disagree**

2.4 In the context of Teacher-related factor

Table 2.4 shows the extent of Factors Affecting the Absenteeism of Pupils in Intermediate Level at Población Elementary School Indanan South in the context of Teacher-related factor. This category obtained a total weighted mean score of 2.27 with standard deviation of 1.08596 which is rated as “Disagree”. This result indicates that the students involved in this study affirmed that they do not perceive to have a significant effect on their absenteeism at Población Elementary School Indanan South in the context of Teacher-related factor.

Notably, student-respondents rated the following items, among others as “**Disagree**”: “My teacher scolds me.”, “I cannot understand my teacher’ lesson.”, and, “I do not like my teacher.”

Table 2.4 Extent of Factors Affecting the Absenteeism of Pupils in Intermediate Level at Población Elementary School Indanan South in the context of Teacher-Related Factor

Statements		**Mean**	**S. D**	**Rating**
1	My teacher scolds me.	2.39	1.456	Disagree
2	I cannot understand my teacher’ lesson.	2.23	1.392	Disagree
3	I do not like my teacher.	2.20	1.449	Disagree
Total Weighted Mean		**2.27**	**1.08596**	**Disagree**

2.5 In the context of Classroom Atmosphere

Table 2.5 shows the extent of Factors Affecting the Absenteeism of Pupils in Intermediate Level at Población Elementary School Indanan in the context of Classroom Atmosphere. This category obtained a total weighted mean score of 2.67 with standard deviation of 1.16582 which is rated as “Neutral”. This result indicates that the students involved in this study affirmed that there is a Neutral effect on their Absenteeism at Población Elementary School Indanan South in the context of Classroom Atmosphere. This implies that students perceive factors as having neither a significant positive nor negative impact on their absenteeism.

Notably, student-respondents rated the following items, among others as “**Neutral**”: “Our classroom is hot and uncomfortable.”, and “It is noisy inside the classroom.”

Table 2.5 Extent of Factors Affecting the Absenteeism of Pupils in Intermediate Level at Población Elementary School Indanan South in the context of Classroom Atmosphere.

	Statements	Mean	S. D	Rating
1	Our classroom is hot and uncomfortable.	2.78	1.474	Neutral
2	It is noisy inside the classroom.	2.91	1.688	Neutral
3	A classmate/classmate's bullies/bully me.	2.32	1.582	Disagree
Total Weighted Mean		**2.67**	**1.16582**	**Neutral**

2.6 In the context of Home-Related Factor

Table 2.6 shows the extent of Factors Affecting the Absenteeism of Pupils in Intermediate Level at Población Elementary School Indanan South MBHTE-Sulu: Teachers' perspective in the context of Home-Related Factor. This category obtained a total weighted mean score of 2.37 with standard deviation of 1.06732 which is rated as "Disagree". This result indicates that the students involved in this study affirmed that they do not perceive to have a significant effect on their absenteeism at Población Elementary School Indanan South the context of Home-Related Factor.

Notably, student-respondents rated the following items, among others as "**Disagree**": "My parents quarreled", and "I have no money to buy snacks in school."

Table 2.6 Extent of Factors Affecting the Absenteeism of Pupils in Intermediate Level at Población Elementary School Indanan South in the context of Home-Related Factor.

	Statements	Mean	S. D	Rating
1	My parents quarreled	2.43	1.486	Disagree
2	I am too pre-occupied with household chores.	2.54	1.520	Neutral
3	I have no money to buy snacks in school.	2.13	1.447	Disagree
Total Weighted Mean		**2.37**	**1.06732**	**Disagree**

3. Is there a significant difference in the extent of Factors Affecting the Absenteeism of pupils in Intermediate level at Población Elementary School in terms of: Physical factor, Health factor, Personal attitude, Teacher-related factor, Classroom atmosphere, Home-related factor; when data are grouped according to their demographic profile in terms of: 3.1 Age, 3.2 Gender, 3.3 Parents Parents educational attainment, and 3.4 Parents Average Monthly Income?

3.1 According to Age

Table 3.1 shows the variation in the degree of factors influencing the absenteeism of students in Población Elementary School's Intermediate level when data are categorized based on their age-related demographic profile. The F-values and probability values of the subcategories that are subsumed are in fact significant at alpha 0.05, as this table illustrates. This indicates that although the respondents were primary school students, their ages varied, but generally speaking, so did their perceptions of the factors behind their absence from Población primary's intermediate level. This implies that student-respondents with the age range 13 years old and above may make him/her better perceiver toward extent of impact of preschool program in the case of Población Elementary School Indanan South compared to those within 10 years old and below as categorized in this study, or vice versa.

Hence, it is safe to say that variable age has indeed significant intervention in the ways how student-respondents at Población Elementary School Indanan South perceive the extent of impact of Factors Affecting their Absenteeism in Intermediate level at Población Elementary. Therefore, the hypothesis which states that: “There is no significant difference in the subcategories subsumed under the extent of impact of Factors Affecting their Absenteeism in Intermediate level at Población Elementary when data are grouped according to their demographic profile in terms of age” is rejected.

Table 3.1 Difference in the extent of Factors Affecting their Absenteeism in Intermediate level at Población Elementary when data are grouped according to their demographic profile in terms of age.

Sources of Variation		Sum of squares	Df	Mean Square	F	Sig.	Description
Physical Factor	Between Groups	25.468	2	12.734	13.928	.000	Significant
	Within Groups	88.686	97	.914			
	Total	114.154	99				

Health Factor	Between Groups	5.100	2	2.550	2.631	.077	Not Significant
	Within Groups	94.029	97	.969			
	Total	99.129	99				
Personal Attitude	Between Groups	39.982	2	19.991	22.531	.000	Significant
	Within Groups	86.066	97	.887			
	Total	126.049	99				
Teacher-Related Factor	Between Groups	51.929	2	25.965	38.854	.000	Significant
	Within Groups	64.822	97	.668			
	Total	116.751	99				
Classroom Atmosphere	Between Groups	26.716	2	13.358	12.016	.000	Significant
	Within Groups	107.838	97	1.112			
	Total	134.554	99				
Home-Related Factor	Between Groups	29.480	2	14.740	17.165	.000	Significant
	Within Groups	83.298	97	.859			
	Total	112.778	99				

* Significant at alpha 0.05

When data are grouped according to client-respondents' demographic profile in terms of average monthly family income, a Post Hoc Analysis using Tukey test is performed to determine which groups classified according to age have different levels of mean in the extent of Factors Affecting their Absenteeism in Intermediate level at Población Elementary.

Table 3.1.1 shows the multiple comparison of the subcategories subsumed under extent of Factors Affecting their Absenteeism in Intermediate level at Población

Elementary when data are grouped according to their demographic profile in terms of age. It reveals on this study that student-respondents who are 10 years and below tend to perceive better on the extent of Factors Affecting their Absenteeism in Intermediate level at Población Elementary compared to those middle and upper level of age group as categorized in this study.

Table 3.1.1 Multiple comparison of the extent of Factors Affecting their Absenteeism in Intermediate level at Población Elementary when data are grouped according to their. Demographic profile in terms of age.

Dependent Variable	(I) Grouping by Age	(J) Grouping Age	Mean Difference (I – J)	Std. Error	Sig.
On Physical Factor	10 years old and below	11-12 years old	.99259*	.19648	.000
		13 years old and above	1.19259*	.45075	.026
Personal Attitude	10 years old and below	11-12 years old	1.29407*	.19355	.000
		13 years old and above	.94074	.44404	.091
Teacher-Related Factor	10 years old and below	11-12 years old	1.47926*	.16798	.000
		13 years old and above	.92593*	.38536	.047
Classroom Atmosphere	10 years old and below	11-12 years old	1.00370*	.21666	.000
		13 years old and above	1.30370*	.49704	.027
Home-Related Factor	10 years old and below	11-12 years old	-1.30370*	.49704	.027
		13 years old and above	-.30000	.49455	.817

*The mean difference is significant at the 0.05 level

3.2 According to Gender

Table 3.2 presents the difference in the extent of Factors Affecting the Absenteeism of pupils in Intermediate level at Población Elementary School when data

are grouped according to their demographic profile in terms of gender. As this table illustrates, when data are grouped according to their gender-specific demographic profile at Población Elementary School, all of the F-values and probability values of the subcategories covered under the extent of Factors Affecting the Absenteeism of pupils in Intermediate level are not significant at alpha 0.05, with the exception of the Health Factor. This indicates that there is no difference in the perceptions of male and female student respondents regarding the factors influencing the level of absenteeism among intermediate-level students at Población Elementary School Indanan South. This further suggests that when data are grouped according to their demographic profile in terms of gender, or vice versa, being a male student-respondent may not make him a better perceiver toward the extent of Factors Affecting the Absenteeism of pupils in Intermediate level at Población Elementary School.

Hence, it is safe to say that variable gender has no significant intervention in the ways how student-respondents at Población Elementary School Indanan perceive the extent of Factors Affecting the Absenteeism of pupils in Intermediate level at Población Elementary. Therefore, the hypothesis which states that: “There is no significant difference in the subcategories subsumed under the extent of Factors Affecting the Absenteeism of pupils in Intermediate level at Población Elementary School when data are grouped according to their demographic profile in terms of gender” is rejected.

Table 3.2 Difference in the extent of Factors Affecting their Absenteeism in Intermediate level at Población Elementary when data are grouped according to their demographic profile in terms of gender.

Variables	Grouping	Mean	S.D	Mean Difference	t	Sig.	Description
Physical Factor	Male	2.8917	1.12568	.20278	.924	.358	Not Significant
	Female	2.6889	1.03946				
Health Factor	Male	3.7000	.91147	.45556	.20007	.025	Not Significant
	Female	3.2444	1.02302				
Personal Attitude	Male	2.5000	.97548	.08889	.23133	.702	Not Significant
	Female	2.4111	1.22646				

Teacher-Related Factor	Male	2.3500	1.10670	.12778	.574	.567	Not Significant
	Female	2.2222	1.07823				
Classroom Atmosphere	Male	2.6000	1.21294	-.11667	.23889	.626	Not Significant
	Female	2.7167	1.14129				
Home-Related Factor	Male	2.4833	1.13968	.19444	.21809	.375	Not Significant
	Female	2.2889	1.01860				

* Significant at alpha 0.05

3.3 According to Parents educational attainment

Table 3.3 presents the difference in the extent of Factors Affecting the Absenteeism of pupils in Intermediate level at Población Elementary School when data are grouped according to their demographic profile in terms of Parents educational attainment. It can be gleaned from this table that except for Physical factor and health factor, all the F-values and probability values of the subcategories subsumed under the extent of Factors Affecting the Absenteeism of pupils in Intermediate level at Población Elementary School, Ministry of Basic, Higher and Technical Education –Sulu are indeed significant at alpha 0.05. This means that though the student-respondents involved in this study vary in their Parents educational attainment, generally they differ in their perceptions toward the extent of Factors Affecting the Absenteeism of pupils in Intermediate level at Población Elementary School. It implies that the parents of student-respondents with doctorate degree may be a better perceiver on the extent of Factors Affecting the Absenteeism of Pupils in Intermediate Level at Población Elementary School Indanan South District compared to those who only have bachelor's degree as their parents' educational attainment.

Hence, it is safe to say that generally, the Parents educational attainment variable has a significant intervention in the ways how student-respondents perceive the extent of Factors Affecting the Absenteeism of pupils in Intermediate level at Población Elementary School Sulu. Therefore, the hypothesis which states that: "There is no significant difference in the subcategories subsumed under the extent of Factors Affecting the Absenteeism of pupils in Intermediate level at Población Elementary School when data are grouped according to their demographic profile in terms of Parents educational attainment" is rejected.

Table 3.3 Difference in the extent of Factors Affecting their Absenteeism in Intermediate level at Población Elementary when data are grouped according to their demographic profile in terms of Parents educational attainment.

Sources of Variation		Sum of squares	df	Mean Square	F	Sig.	Description
Physical Factor	Between Groups	6.524	3	2.175	1.940	.128	Not Significant
	Within Groups	107.631	96	1.121			
	Total	114.154	99				
Health Factor	Between Groups	2.418	3	.806	.800	.497	Not Significant
	Within Groups	96.711	96				
	Total	99.129	99	1.007			
Personal Attitude	Between Groups	25.422	3	8.474	8.084	.000	Significant
	Within Groups	100.627	96				
	Total	126.049	99	1.048			
Teacher-Related Factor	Between Groups	15.461	3	5.154	4.885	.003	Significant
	Within Groups	101.290	96				
	Total	116.751	99	1.055			
Classroom Atmosphere	Between Groups	20.153	3	6.718	5.637	.001	Significant
	Within Groups	114.402	96				
	Total	134.554	99	1.192			

Home-Related Factor	Between Groups	11.655	3	3.885	3.688	.015	Significant
	Within Groups	101.123	96				
	Total	112.778	99	1.053			

* Significant at alpha 0.05

3.4 According to Parents Average Monthly Income

Table 3.4 shows the variation in the degree of factors influencing the absenteeism of students in Población Elementary School's Intermediate level when data are grouped based on their demographic profile, specifically their parents' average monthly income. This table shows that all of the F-values and probability values of the subcategories that are included are not significant at alpha 0.05, with the exception of the Health Factor. This indicates that while the study's participant students' parents' average monthly income varies, their assessments of the factors influencing intermediate students' absenteeism at Población Elementary School generally do not differ. It suggests that student respondents who reported a monthly income of 5000 pesos or less than their parents may not have had a better understanding of the factors influencing students' absenteeism at Población Elementary School Indanan South in the intermediate level than respondents who reported a monthly income of 10001 or more.

Hence, it is safe to say that the Parents Average Monthly Income variable has no significant intervention in the ways how preschool student-respondents perceive the extent of Factors Affecting the Absenteeism of Pupils in Intermediate Level at Población Elementary School Indanan South. Therefore, the hypothesis which states that: “There is no significant difference in the subcategories subsumed under the extent of impact of Behavioral Tendencies of Intermediate Pupils at Población Elementary School Indanan South elementary school when data are grouped according to their demographic profile in terms of Parents Average Monthly Income” is accepted.

Table 3.4 Difference in the extent of Factors Affecting their Absenteeism in Intermediate level at Población Elementary when data are grouped according to their demographic profile in terms of Parents Average Monthly Income.

Sources of Variation		Sum of squares	df	Mean Square	F	Sig.	Description
Physical Factor	Between Groups	5.635	2	2.817	2.518	.086	Not Significant
	Within Groups	108.520	97	1.119			
		114.154	99				

	Total						
Health Factor	Between Groups	7.168	2	3.584	3.780	.026	Significant
	Within Groups	91.961	97	.948			
	Total	99.129	99				
Personal Attitude	Between Groups	2.642	2	1.321	1.038	.358	Not Significant
	Within Groups	123.407	97	1.272			
	Total	126.049	99				
Teacher-Related Factor	Between Groups	.999	2	.500	.419	.659	Not Significant
	Within Groups	115.752	97	1.193			
	Total	116.751	99				
Classroom Atmosphere	Between Groups	3.479	2	1.740	1.287	.281	Not Significant
	Within Groups	131.075	97	1.351			
	Total	134.554	99				
Home-Related Factor	Between Groups	.819	2	.409	.355	.702	Not Significant
	Within Groups	111.959	97	1.154			
	Total	112.778	99				

4. Is there a significant correlation among the sub-categories under Factor Affecting the Absenteeism of pupils in Intermediate level at Poblacion Elementary School?

Table 4 shows the correlation among the subcategories subsumed under the extent of Factors Affecting the Absenteeism of Pupils in Intermediate Level At Población

Elementary School Indanan South. As shown in the table, the computed Pearson correlation Coefficients (Pearson *r*) between these variables are significant at alpha 0.05.

Furthermore, the correlational degree among the extent of Factors Affecting the Absenteeism of Pupils in Intermediate Level at Población Elementary School Indanan South is as follows:

1) Low positive degree of correlation among the extent of Factors Affecting the Absenteeism of Pupils in Intermediate Level At Población Elementary School Indanan South in the context of Physical Factor, Health Factor and Home-Related Factor.
2) High positive degree of correlation among the extent of Factors Affecting the Absenteeism of Pupils in Intermediate Level at Población Elementary School Indanan South in the context of Physical Factor, Personal Attitude and Classroom Atmosphere. It implies that these factors play significant roles in influencing pupil absenteeism at the school, suggesting that addressing these factors may be crucial in reducing absenteeism.
3) Nearly Zero positive degree of correlation among the extent of Factors Affecting the Absenteeism of Pupils in Intermediate Level at Población Elementary School Indanan South in the context of Health Factor, Teacher-Related Factor and Home-Related Factor.
4) High positive degree of correlation among the extent of Factors Affecting the Absenteeism of Pupils in Intermediate Level at Población Elementary School Indanan South in the context of Health Factor and Personal Attitude.
5) Low positive degree of correlation among the extent of Factors Affecting the Absenteeism of Pupils in Intermediate Level at Población Elementary School Indanan South in the context of classroom atmosphere and health factor.
6) High positive degree of correlation among the extent of Factors Affecting the Absenteeism of Pupils In Intermediate Level At Población Elementary School Indanan South in the context of Personal Attitude, Teacher-Related Factor, Classroom Atmosphere and Home-Related Factor.
7) High positive degree of correlation among the extent of Factors Affecting the Absenteeism of Pupils In Intermediate Level At Población Elementary School Indanan South in the context of Teacher-Related Factor, Classroom Atmosphere and Home-Related Factor.

High positive degree of correlation among the extent of Factors Affecting the Absenteeism of Pupils In Intermediate Level At Población Elementary School Indanan South in the context of Classroom Atmosphere and Home-Related Factor.

This study reveals various degrees of correlation among factors affecting absenteeism of intermediate-level pupils at Población Elementary School Indanan South. Firstly, there's a low positive correlation between Physical Factor, Health Factor, and Home-Related Factor, suggesting a weak relationship among these factors and absenteeism. Secondly, a high positive correlation between Physical Factor, Personal Attitude, and Classroom Atmosphere indicates significant roles these factors play in absenteeism, suggesting addressing them could reduce absenteeism. Thirdly, a nearly

zero positive correlation between Health Factor, Teacher-Related Factor, and Home-Related Factor implies minimal influence on absenteeism. Furthermore, a high positive correlation between Health Factor and Personal Attitude indicates their substantial impact on absenteeism. Additionally, a low positive correlation between classroom atmosphere and health factor suggests a weaker connection. Furthermore, a high positive correlation among Personal Attitude, Teacher-Related Factor, Classroom Atmosphere, and Home-Related Factor emphasizes their collective influence on absenteeism. Lastly, high positive correlations among Teacher-Related Factor, Classroom Atmosphere, and Home-Related Factor or between Classroom Atmosphere and Home-Related Factor highlight their significant combined effect on absenteeism.

Hence, it is safe to say that generally the subcategories subsumed under the extent of Factors Affecting the Absenteeism of Pupils in Intermediate Level at Población Elementary School Indanan South are highly correlated. Therefore, the hypothesis which states that “There is no the significant correlation among the sub-categories subsumed under the extent of Factors Affecting the Absenteeism of Pupils In Intermediate Level At Población Elementary School Indanan South” is rejected.

Table 4 shows the correlation among the subcategories subsumed under the extent of Factors Affecting the Absenteeism of Pupils in Intermediate Level at Población Elementary School Indanan South.

Variables		**Pearson *r***	**Sig.**	**N**	**Description**
Dependent	**Independent**				
Physical Factor	**Health Factor**	.233*	.020	100	Low
	Personal Attitude	.558**	.000	100	High
	Teacher-Related Factor	.486**	.000	100	Moderate
	Classroom Atmosphere	.549**	.000	100	High
	Home-Related Factor	.260**	.000	100	Low
Health Factor	**Personal Attitude**	-.003	.980	100	High

	Teacher-Related Factor	.013	.894	100	Nearly Zero
	Classroom Atmosphere	.159	.113	100	Low
	Home-Related Factor	.065	.518	100	Nearly Zero
Personal Attitude	**Teacher-Related Factor**	.628**	.000	100	High
	Classroom Atmosphere	.641**	.000	100	High
	Home-Related Factor	.504**	.000	100	High
Teacher-Related Factor	**Classroom Atmosphere**	.625**	.000	100	High
	Home-Related Factor	.624**	.000	100	High
Classroom Atmosphere	**Home-Related Factor**	.511**	.000	100	High

*Correlation coefficient is significant at alpha .05
Correlation Coefficient Scales Adopted from Hopkins, Will (2002):
0.0-0.1 = Nearly Zero; 0.1-0.3 = Low; 0.3-0.5 = Moderate; 0.5-0.7 = High; 0.7-0.9 = Very High; 0.9-1 = Nearly Perfect.

Conclusions

The study concludes the following:

1) The demographic profile of student-respondents in the Población Elementary School Indanan South is characterized by a predominance of females. Additionally, a substantial majority falls within the age group of 11-12 years old of age brackets. Furthermore, majority of student-respondents have parents who are a graduate of elementary earning an average of not more than 5000 incomes per month. These findings

2) This here findings suggest that while student-respondents perceive the factors related to absenteeism differently across various contexts, there is a tendency to disagree regarding the influence of Personal Attitude, Teacher-Related Factor, and Home-Related Factor on absenteeism among intermediate-level pupils at Población Elementary School Indanan South.

3) Generally, the analysis suggests that there is no substantial difference in the extent of factors affecting absenteeism among intermediate-level pupils at Población Elementary School Indanan South when data are grouped by gender and parents' average monthly income. However, when grouped by age and parents' educational attainment, there are differing perceptions among student-respondents regarding the extent of these factors. This indicates that age and parents' educational attainment may influence how students perceive the factors contributing to absenteeism, whereas gender and parents' average monthly income may not have as significant an impact on these perceptions.

4) The analysis indicates a high degree of correlation among the sub-categories encompassing the extent of factors influencing absenteeism among intermediate-level pupils at Población Elementary School Indanan South. This suggests a strong interconnection among these factors, indicating that they collectively contribute to the phenomenon of absenteeism.

Recommendations

This study recommends the following:

1) Department of Education (DepEd) may establish mechanisms for ongoing monitoring and evaluation of absenteeism rates and intervention effectiveness. DepEd may provide guidance on data collection methods, performance indicators, and evaluation frameworks to ensure rigorous monitoring and assessment of intervention outcomes.

2) Teachers in the Población Elementary School Indanan South may prioritize their own professional development and growth to stay abreast of current research, best practices, and emerging trends in education. Teachers can stay inspired and motivated in their practice, improve their teaching skills, and broaden their knowledge base by participating in professional learning groups, workshops, and ongoing training. Additionally, discuss with the parents the advantages of having their kids in school whenever there are classes during the parent-teacher conference. Stress that if they continue to ask their kids to miss school, it will create a negative example for the kids.

3) Educators are encouraged to actively participate in conducting a thorough assessment of all factors contributing to absenteeism, considering their interconnections and collective impact. This should involve taking a comprehensive look at the individual, physical, health, and teacher-related aspects as well as the classroom and home environments. Teach the pupils how to look after their general health. Oral health and general sickness should be prioritized.

4) More so, Future researchers in the field of Education are encouraged to conduct study like this one to further assess the factors contributing to absenteeism among

intermediate-level pupils and how will it affect their academic performance, socio-emotional development, and overall well-being.

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Compliance with Ethical Standards

First, a comprehensive informed consent form explaining the goals, methods, potential risks and benefits, and confidentiality policies was delivered to each participant. Furthermore, all trial data points were carefully anonymised in cases when the respondents' personal information had no bearing on the trial results. Data collection was conducted in a private environment to preserve participant privacy, and the collected data was kept in a secure archive that was only accessible by the researchers. Despite the differences in their thoughts and points of view, all members were respected in the same spirit. Additionally, the researchers made an effort to give the participants a welcoming and secure environment so they could talk openly about their experiences.

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FACTORS PRECEDING WORKPLACE DISTRESS AND ITS IMPACT TO THE PERFORMANCE OF EMERGENCY ROOM NURSES

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ABSTRACT

This study determined the factors preceding workplace distress and its impact on ER Nurses' performance in different Eastern Pangasinan hospitals. It tackled their age, sex, civil status, highest educational attainment, monthly family income, and work status. The study utilized the descriptive research design and a survey questionnaire as the primary tools for gathering data. Several statistical tools were used, like frequency and percentage, weighted mean, t-test, Scheffe test, and ANOVA (Analysis of Variance). The ER nurses are young adults, female-dominated, into marital relationships, did not pursue tertiary education, earn an average salary, and have casual and contractual status. The respondents' stress is highest on management and physical stress and lowest on organizational culture and relationship work stress. The impact of workplace distress on their performance had caused them burn-out and sleep disturbances, short temper, and difficulty concentrating. The younger age bracket experienced organizational culture stress compared to the older ones. Contractual employees claim to have experienced organizational culture stress more than regular employees. Work status affects emergency room nurses' response to time and organizational culture stress. The higher the emergency room nurse's work status, the less time and physical stress they experience. No significant relationship exists between the factors preceding workplace distress among emergency room nurses and the rest of the profile variables.

Keywords: *Workplace, Distress, Performance, ER Nurses*

INTRODUCTION

Being a nurse has several difficulties that might lead to stress, burnout, and depression. These difficulties can result in medical errors, hazards to patient safety, and less favorable health results if the correct coping mechanisms are not used. Emergency nurses work in a setting where there is a distinct risk to the safety of patients and clinicians due to the environment's challenges: demand surpassing capacity, a lack of people to handle this need and limited resources. While this has been shown to occur across specialties, emergency nurses are at the most risk, with potential repercussions for patients, organizations, and practitioners.

According to Michael Neenan (2018) of the Center for Stress Management and Cognitive-Behavioral Therapists, stress results from pressures exceeding our ability to cope. Increased stress can harm one's physical health at work and outside. The fight-or-flight response can impair biological functions and make people more susceptible to illness when activated repeatedly. The recurrent production of the stress hormone cortisol, for instance, can compromise immunity and increase the risk of Alzheimer's disease, cardiovascular disease, and autoimmune illnesses. Chronic stress can harm your health by preventing you from engaging in good habits like exercise, a balanced diet, and sleep. Workplace stress can have adverse effects on companies or organizations. Burnout lowers workplace productivity, increases absenteeism and job turnover, fosters workplace conflict, and increases stress in the office. Organizational culture and management may also cause anxiety, including fear-based cultures that leave employees anxious about their performance, ineffective or insufficiently trained leadership, unmanageable workloads, and unaddressed relational issues between colleagues.

One of the groups of employees highly susceptible to workplace distress are those working in hospitals – Doctors and Nurses. A nurse may work in a variety of environments. However, working in hospitals is the most prevalent. In addition to hospitals, nurses have opportunities for employment in settings such as patients' homes, residential care facilities, schools, research environments, and various medical clinics, as well as residential care at schools, research settings, and other medical clinics. They could also work in the public health sector to promote better patient health outcomes in the healthcare system. Most nurses are employed in hospital settings. In this setting, a nurse collaborates with other medical specialists as part of a medical team to give patients the best treatment possible. The nurse's job is to protect the patient's interests and watch for any changes in their health so they can respond appropriately. They frequently follow the instructions of other healthcare professionals who make crucial choices about the treatment of the patients, but they are also involved in the process. They may provide feedback and recommendations to support the patient.

The healthcare workforce is predominantly composed of nurse’s health and well-being are affected by the demands of their workplace, and in turn, their well-being affects their work and the people they care for. As it has in so many other areas, COVID-19 has imposed new challenges for nurses' well-being. However, it has also offered opportunities to give nurses' well-being the attention it deserves and to address the systems, structures,

and policies that create workplace hazards and stresses that lead to burnout, fatigue, and poor physical and mental health. Flaubert, J. L., Menestrel, S. L., Williams, D. R., & Wakefield, M. K. (2021, May 11). Because nurses are on the front lines of direct patient care, they are susceptible to a variety of pressures that can adversely affect their physical and mental health.

According to Phillips et al. (2022), emergency nurses are highly susceptible to burnout due to continual exposure to traumatic events, varying work schedules, violence directed at staff, and, in recent times, due to the stressors of the COVID-19 pandemic. Moreover, Yuwanich et. al. (2017), cited that occupational stress has negative effects on employee's health and organizational productivity. Nurses in emergency department are more exposed to stress than nurses in other departments.

Another factor that triggers the stress to ER nurses is being underpaid and overworked. According to the news of Magsambol (Rappler, 2020), the Department of Labor and Employment (DOLE), cited an entry-level registered nurse receives an average salary of P8,000 ($158.54) to P13,500 ($267.54) per month.

Another factor that stresses nurses is time pressure. According to Goldsby (2020), perceived time pressure is one of the primary sources of stress for nurses. Given the possible adverse effects of perceived time pressures on nurses, a nurse manager's capacity to guide nurses in reducing this pressure and, as a result, help them make better decisions might improve nurses' performance and well-being.

Another factor based on the study of Rosa et al. (2019) is the shift of work, which involves an alteration in psychophysical homeostasis and a decrease in performance. It is an obstacle for social and family relationships, as well as a risk factor for stress, sleep disorders, metabolic disorders, diabetes, cardiovascular disorders, and breast cancer.

Based on the issues mentioned above, the researcher determined the factors that trigger workplace distress and its impact to the performance of ER nurses in selected hospitals in Eastern Pangasinan. Since Province of Pangasinan is composed of highly urbanized cities and municipalities, there are many nurses who are suffering from workplace distress while working in different hospitals. Moreover, this study will give recommendations and interventions to lessen the negative impact of workplace distress for the improvement of performance of nurses.

Conceptual/ Theoretical Framework

The study adopted the Stress theory of Hans Selye. He theorized that overexposing the body to stress would cause "general adaptation syndrome," which could lead to shock, alarm and eventually exhaustion. Far from being limited to soldiers, the range of potential sufferers included all of humanity (Rothman, 2016).

The Transactional Theory of Stress and Coping, developed by Lazarus and Folkman, provides a comprehensive framework for understanding how individuals perceive and respond to stressors. This theory emphasizes that external events do not

solely determine stress but are also influenced by the individual's appraisal of those events and their perceived ability to cope Berjot, S., & Gillet, N. (2011).

According to the study by Jennings (2008), stress has been classified as an interaction, an outcome or response, and an antecedent or stimulus. It has been examined from a wide range of perspectives. For instance, Hans Selye's physiological evaluation encourages considering the link between stress and sickness. On the other hand, stress was viewed by Lazarus and Folkman (1984) as "a particular relationship between the person and the environment that the person appraises as taxing or exceeding his or her resources and endangering his or her well-being."

According to Jennings (2008), stress has been classified into various perspectives, including an interaction, an outcome or response, and an antecedent or stimulus. This multifaceted view acknowledges the complexity of stress and its impacts. For example, Hans Selye's physiological perspective emphasizes the connection between stress and illness. On the contrary, Lazarus and Folkman (1984) delineated stress as "a specific dynamic between the individual and their surroundings, perceived by the individual as imposing demands or pressures that surpass their available resources, thus posing a threat to their well-being." This emphasizes the subjective assessment of stress within the interplay of the individual and their environment.

Another theory applied in the study is the Sub concept of the Neuman System Model, which considers stressors as any phenomena capable of breaching flexible and regular lines of defense, potentially leading to positive or negative outcomes. Stressors may be intrapersonal - which occurs within the person’s system boundary and correlates with the internal environment; Interpersonal – which occurs outside the person’s system boundary and has effects on the system, such as the environment; and Extra personal stressors, which occur outside the person’s system but in a greater distance than interpersonal stressors such as social policies. When these stressors break the line of defense, the person’s system is invaded, lines of resistance are activated, and the stress will occur either positively or negatively.

Aligning with the abovementioned theories, people deal with environmental stress. In a workplace setting, distress is caused by many factors, such as heavy workloads, time pressures, environment, and work shift schedules. In this study, the factors mentioned are being used to assess their impact on ER Nurses’ performance and formulate interventions to lessen their adverse effects and improve their perform.

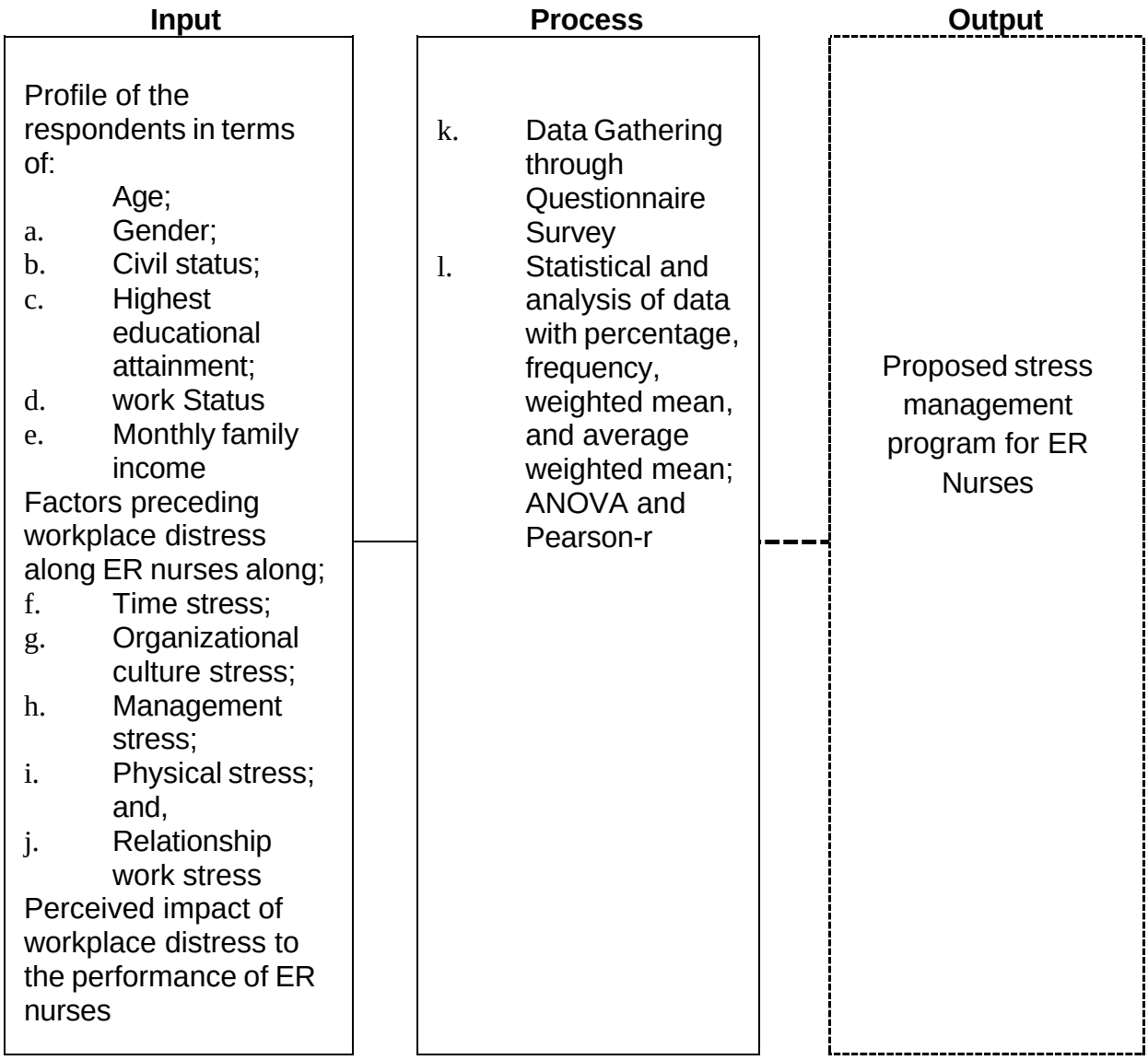


Figure 1. Research Paradigm

Research Questions

This study determined the factors preceding workplace distress and its impact on ER nurses' performance in selected Eastern Pangasinan hospitals.

Specifically, this study answered the following:

1. What is the profile of the respondents in terms of:
    a. age;
    b. gender;
    c. civil status;

    d. highest educational attainment
    e. Work Status, and
    f. Monthly family income?
2. What are the factors preceding workplace distress among ER nurses along;
    a. time stress;
    b. organizational culture stress;
    c. management stress;
    d. physical stress; and
    e. relationship at work stress?
3. What are the perceived impact of workplace distress on their performance as ER nurses?
4. Is there a significant difference between the factors preceding workplace distress among ER nurses across their profile variables?
5. Is there a significant relationship between the factors preceding workplace distress among ER nurses to their perceived impact of workplace distress to the performance as ER nurses?
6. What intervention program could be proposed to develop effective behaviors to help reduce and manage stress at work?

Null Hypotheses

This study was tested in its null form at 0.05 level of significance that;

1. There is no significant difference between the between the factors preceding workplace distress among ER nurses across their profile variables
2. There is no significant relationship between the factors preceding workplace distress among ER nurses across their profile variables.

METHODOLOGY

This chapter provides an overview of the research design and strategy employed, offers insights into the study's population and locality, elucidates the data-gathering tool utilized, expounds upon the data-gathering procedure, and delineates the statistical treatment of data.

Population and Locale of the Study

The study subjects were the Emergency Room Nurses in 5 different public hospitals and an Infirmary clinic in Eastern Pangasinan. ER 50 nurses were involved as respondents and were present when the data gathering was done. The study was conducted during the second semester of 2023-2024.

Validation of Instrument

The questionnaire was utilized to gather data from the respondents. The items found in the questionnaire were taken from several articles and research studies related to the study. However, it was subjected to validation from experts in the nursing field: a

faculty researcher, an instructor, and a nurse administrator in the nursing service. The combined rating was highly valid.

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Data Gathering Tool

The study determined the Factors Preceding Workplace Distress and Its Impact on Emergency Room Nurses' Performance in selected Eastern Pangasinan hospitals. The tool used in gathering the data was a survey questionnaire adapted from different studies and literature related to the study. Part I dealt with the demographic profile of the respondents in terms of their age, sex, civil status, highest educational attainment, monthly family income, and work status. Part II tackled the factors preceding workplace distress and its impact on the performance of ER nurses. Part III focused on the impact of workplace distress on their performances, and Parts IV and IV focused on the significant relationship and differences between the Factors Preceding Workplace Distress and Its Impact on the Performance of Emergency Room Nurses across their profile variables.

The questionnaire was validated by experts in the field of nursing: Professors handling the Research subjects, ER supervisors, and Nursing Faculty. Their suggestions and recommendations were incorporated to further improve the questionnaire.

Data Gathering Procedure

After formulating the questionnaire, a letter addressed to the Dean of the Graduate and Advance Studies, asking for permission to conduct the study, will be communicated. As soon as permission was granted, the researcher wrote the respondents and started disseminating questionnaires. The researcher personally used the data-gathering process to answer questions raised by the respondents. Data was gathered during the Second semester of the school year 2023-2024. The data was collected, tabulated, and analyzed upon retrieval of the research instrument.

Treatment of Data

The data collected were tabulated into a contingency table and treated with proper statistical measures.

For problem number 1, the profile of the respondents in terms of sex, gender, civil status, highest educational attainment, monthly family income, work status, and monthly

family income was determined using frequency and percentage. The formula used is as follows:

$$P(\%) = \frac{F}{N} \times 100$$

Where; P= percentage equivalent each bracket

f= number of respondents in each bracket

n= total number of respondents

$$WM = \frac{\sum fX}{N}$$

For problem number 2, the weighted mean was used on the factors preceding workplace distress among ER nurses, along with time stress, organizational culture stress, management stress, physical stress, and relationships at work stress. Also, problem 3 is the respondents' perceived impact of workplace distress on their performance as ER nurses. The formula is as follows:

Where; WM= average of each category

f= number of respondents in each bracket

X=point value classification

n= total number of respondents

A five-point Likert Scale was used in the analysis.

Point Value Classification	Mean Range	Descriptive Equivalent
5	4.50-5.00	Strongly Agree
4	3.50-4.49	Agree
3	2.50-3.49	Neutral
2	1.50-2.49	Disagree
1	1.00-1.49	Strongly Disagree

For problem number 4, the significant relationship and difference between the factors preceding workplace distress among ER nurses across their profile variables, t-test, and One-Way ANOVA were used. The formula for computing the t-test and ANOVA were as follows:

$$t = \frac{d\sqrt{n}}{S_d}, \quad df = n-1$$

Where; d= mean of the differences

n= number of sample

S_d= standard deviation of the differences

For One-way Analysis of Variance (ANOVA):

Source of Variations	SS	Df	MS	Fc
Between Columns	$SS_b = \frac{\sum_{i=1}^{k} T_i^2}{n} - \frac{T^2}{nk}$	$df_b = k-1$	SS_b	

			$MSS_b = \frac{}{df_b}$	$F_c = \frac{MSS_b}{MSS_w}$
Within Columns	$SS_w = SS_t - SS_b$	$df_w = df_t - df_b$	$MSS_w = \frac{SS_w}{df_w}$	
Total	$SS_t = \sum_{i=1}^{k}\sum_{j=1}^{n} x_{ij}^2 - \frac{T^2}{nk}$	$df_t = n-1$		

Where; F_C= computed significance value

MSS_b= mean square between columns

MSS_w = mean square within columns

SS_b= sum of squares between columns

SS_w= sum of squares within columns

SSt= total sum of squares

df_b= degrees of freedom between columns

df_w= degrees of freedom within columns

df_t= total degrees of freedom

k= number of columns

n= sample population

For problem number 5, the Pearson-r formula was used on the significant relationship between the factors preceding workplace stress among ER nurses and their perceived impact of workplace distress on their performance as ER nurses. The formula is as follows:

$$r = \frac{n\sum XY - \sum X \sum Y}{\sqrt{[n\sum X^2 - (EX)^2]\,[n\sum Y^2 - (\sum Y)^2]}}$$

Where; $\sum XY$= sum of the products of X and Y

$\sum X^2$= sum of the squared values of X

$\sum Y^2$= sum of the squared values of Y

$\sum X$= sum of the values of X

$\sum Y$= sum of the values of Y

Lastly, problem 6 was a proposed stress management program to develop effective behaviors to help reduce and manage stress in the workplace.

RESULTS AND DISCUSSION

This chapter presents the findings of the study based on the data gathered from the ER nurse respondents.

Part 1. Respondent's Profile

Age. It can be gleaned from the table that the majority of the respondents are in the age bracket of 31-40 years old, with a frequency of 40 or 80 percent, followed by 21-30 years old, with a frequency of 8 or 16 percent, and 41-50 with a frequency of 2 or 4 percent. It revealed that the respondents were young adults. According to Erikson, 31-40 years old are considered young adults. Early adulthood is characterized by the need for young adults to cultivate intimate and affectionate relationships with others. Success in forming these bonds fosters strong connections, while setbacks can lead to feelings of loneliness and isolation. During this phase, individuals actively explore and navigate personal relationships as they transition into adulthood.

Sex. Most respondent nurses were female, with a frequency of 27 or 54 percent, followed by males, with a frequency of 23 or 46 percent. It shows that nursing is still a female-dominated profession. Through the efforts of Florence Nightingale in the mid-nineteenth century, nursing was established as a women's profession.

Civil status. Most respondents were married, with a frequency of 27 or 54 percent, followed by single, with a frequency of 23 or 46 percent. It revealed that the respondents

were into marital relationships and pursuing their experiences in their field of assignment. Being married entails the couple bearing their offspring and forming a family.

Table 1
Distribution of Respondents in terms of their Profile Variables
n=50

Profile Variables	Frequency	Percentage
Age (in years)		
21 – 30	8	16.0
31 – 40	40	80.0
41 – 50	2	4.0
Gender		
Male	23	46.0
Female	27	54.0
Civil Status		
Single	23	46.0
Married	27	54.0
Highest Educational Attainment		
Bachelor's Degree	37	74.0
With Master's units	7	14.0
Master's Degree	6	12.0
Monthly Family Income (in Php)		
Below P20,000	29	58.0
20,001-30,000	5	10.0
30,001-40,000	11	22.0
40,001-50,000	5	10.0
Wok Status		
Job Order	14	28.0
Contractual	9	18.0
Casual	14	28.0
Regular	13	26.0

Highest educational attainment. It revealed that majority of the respondents were bachelor's degree holder with a frequency of 37 or 74 percent, followed by those with masteral units with a frequency of 7 or 14 percent, and MAN degree with a frequency of 6 or 12 percent. It showed that majority of the respondents did not pursue higher level of learning. This might be related to the fact that their salaries are not competitive so some nurses fail to enroll in the masteral or doctoral program.

Monthly family program. It showed that most respondents received an income of below P20,000, with a frequency of 29 or 58 percent, P30,001-P40,000 with a frequency of 11 or 22 percent, P20,001-30,000 and P40,001-P50,000 with a frequency

of 5 or 10 percent. It revealed that the respondents received an average monthly income. According to Peria, a socio-economic planning secretary of NEDA, a family of four needs a decent monthly income of P42,000 a month to live above the poverty line (Castillo, 2018).

Work status. It can be gleaned that most of the respondents were Casual and Job order with a frequency of 14 or 28 percent, those regular with a frequency of 13 or 26 percent, and contractual with a frequency of 9 or 18 percent. It reflects that the respondents have no security of tenure in their jobs, and renewable depending on their performance evaluation. As specified in Attorney at Law Journal, Contractual/Job Orders and Casual employees are two distinct employment status of workers in the government based on Civil Service Commission Memorandum Circular No. 40 (s. 1998). Distinctions of the two terms based on CSC Memorandum Circular Nos. 40 (s. 1998) and 17-02 (s. 2002).

Part II. Factors Preceding Workplace Distress among Emergency Room Nurses

Table 2-7 presents the Factors Preceding Workplace Distress in an Emergency Room Nurses.

As gleaned from the table, the highest indicators are item numbers 1 and 2, “The hours of work are not enough to do all things that must done,” and “I have limited time for my interest/hobbies outside of work,” with a weighted mean of 3.26 and 3.28, or “Moderately Agree.” The respondents somewhat confirm that they experience inadequate time to do their other responsibilities because of work overload. It is a fact that the emergency room (ER) is the first part of the hospital where patients go, and it is always observed that the ER is a busy part of the hospital. At times, inadequate staff is noted where those assigned are overloaded with responsibilities. According to the American Nurses Association (2023), time is critical for a nurse to care for emergency patient situations. Strong time management skills in nursing are also essential to overall health and well-being, including combating stress. Nurses stay on top of their regular responsibilities with a solid strategy while factoring in unexpected circumstances. A well-structured schedule also creates a better work-life balance, so nurses do not spend their free time playing catch-up. Nurses must learn to manage time to ensure the best patient care and work-life harmony.

Table 2
Factors Preceding Workplace Distress among Emergency Room Nurses Along Time Stress
n=50

Indicators	W M	TR
1. The hours of work are not enough to do all things that must done	3.28	MA
2. I have limited time for my interest/hobbies outside of work	3.26	MA
3. I underestimate how long it takes to do things	3.10	MA
4. I rush the process in doing task without ensuring the quality of output	2.44	D

5. I just want to procrastinate.		2.56	MA
	AWM	**2.93**	**MA**

Legend:

Statistical Range	Transmuted Rating
4.50 – 5.00	Strongly Agree (SA)
3.50 – 4.49	Agree (A)
2.50 – 3.49	Moderately Agree (MA)
1.50 – 2.49	Disagree (D)
1.00 – 1.49	Strongly Disagree (SD)

The lowest indicator is item number 4, “I rush the process in doing a task without ensuring the quality of output,” with a weighted mean of 2.44 or “Disagree.” It showed that the ER nurses do not conform to the statement that they do things setting aside the quality of care. Nursing aims to give patients quality nursing care, so nurses maintain that goal for better patient outcomes. Nurses in the ER work very fast because most patients need emergency care, and nurses are aware of that.

Overall, the factors causing workplace distress among emergency room nurses, along with time stress, had an average weighted mean of 2.93, or “Moderately Agree.” It connotes that the ER nurses slightly conform to the indicators. Still, they maintain that the nurses manage their time well to the extent that they extend their duties to finish all the documents needed before the patient is transferred to the ward. Nurses must render care very fast because patients are critical or emergency cases. Nowadays, staffing problems are encountered in many hospitals because many nurses go abroad or look for better job opportunities.

Table 3 presents the factors preceding workplace distress in Emergency Room Nurses along culture stress.

As gleaned from the table, the highest indicators are item numbers 1 and 5, “unable to perform the task as well because of role confusion,” and “that I am unable to participate in decision making,” with a weighted mean of 2.66 and 2.68, or “Moderately Agree.” It reflects that the respondents somewhat confirm that the nurses sometimes got confused due to burnout in their work. The ER is a busy part of the hospital. ER nurses experience it due to the nature of work in the ER, where patients get the first medical management.

Table 3
Factors Preceding Workplace Distress among Emergency Room Nurses Along Organizational Culture Stress
n=50

Indicators	W M	TR
1. Unable to perform task as well because of role confusion.	2.66	MA
2. Uneasy and helpless in solving tasks, when condition comes.	2.60	MA
3. That leadership style is very abusive and inconsiderate.	2.16	D

4. That the organization creates environment of tension, fear and anxiety and can exert unrealistic pressure and control.	2.28	D
5. That I am unable to participate in decision making.	2.68	MA
AWM	**2.48**	**D**

Legend:

Statistical Range	Transmuted Rating
4.50 – 5.00	Strongly Agree (SA)
3.50 – 4.49	Agree (A)
2.50 – 3.49	Moderately Agree (MA)
1.50 – 2.49	Disagree (D)
1.00 – 1.49	Strongly Disagree (SD)

Overall, the factors causing workplace distress among emergency room nurses and culture stress had an average weighted mean of 2.48, or "Disagree." It indicates that the ER nurses do not conform with the indicators mentioned in the factors preceding workplace distress among the ER nurses and culture stress. ANA (2023) cited that a nurse's to-do list begins by evaluating and addressing the hierarchy of needs for patients. That includes ensuring their core physiological needs get met before progressing to additional treatment. Basing care on this tiered system allows the nurse to meet patients' needs in real-time and prioritize decisions.

Table 4 presents the factors preceding workplace distress in Emergency Room Nurses, along with management stress.

As gleaned from the table, the highest indicators are item numbers 2 and 3, "frequently have guilty feelings if I relax and do nothing" and "I often overthink about patient problems even when I am supposed to be relaxing," with a weighted mean of 3.62 and 3.70, or "Agree." It reflects that the respondents ensured that time was well-spent while on duty and maintained their role in giving quality patient care. They have no time to relax because the ER is always busy with severe cases that must be attended to. Most of the time, nurses escape their meals due to work overload.

Table 4
Factors Preceding Workplace Distress among Emergency Room Nurses Along Management Stress
n=50

Indicators	W M	TR
1. There are too many patients' work that are difficult to perform	2.86	MA
2. I frequently have guilty feelings if I relax and do nothing	3.70	A
3. I often over think about patient problems even when I am supposed to be relaxing	3.62	A
4. I feel that I just want to resign due to heavy workloads given by the management	2.94	MA

5. Sometimes I am thinking for resignation and look for other job.		2.94	MA
	AWM	**3.21**	**MA**

Legend:

Statistical Range	Transmuted Rating
4.50 – 5.00	Strongly Agree (SA)
3.50 – 4.49	Agree (A)
2.50 – 3.49	Moderately Agree (MA)
1.50 – 2.49	Disagree (D)
1.00 – 1.49	Strongly Disagree (SD)

The lowest indicators are items numbers 1, 4, and 5, “there is too much patient work that is difficult to perform,” “Sometimes I am thinking of resignation and looking for another job,” and “I feel that I just want to resign due to heavy workloads given by the management,” with a weighted mean of 2.86 and 2.94, or “Moderately Agree.” It showed that the ER nurses sometimes encountered problems of giving up due to the workload they handled, which made them feel unhappy with their work.

Overall, the factors causing workplace distress among emergency room nurses and management stress had an average weighted mean of 3.21, or “Moderately Agree.” It connotes that the ER nurses slightly confirm that they encounter distress regarding management, although they know it is normal for nurses to be loaded with work while on duty. The finding is similar to the study of Shah (2021), where nurses were predominantly female. Nurses who reported leaving their jobs reported burnout as a reason. Nurses who worked more than 40 hours a week were more likely to identify burnout as a reason they left their jobs. Respondents who reported leaving or considering leaving their jobs owing to burnout reported a stressful work environment and inadequate staffing.

Table 5
Factors Preceding Workplace Distress among Emergency Room Nurses Along Physical Stress
n=50

Indicators	WM	TR
1. Fatigued or tired even when I am supposed to be relaxing.	3.44	MA
2. That my appetite has change, have either a desire to binge or have a loss of appetite/ or skip my meal.	3.06	MA
3. Increase muscular aches and pains especially in the neck, head, lower back, and shoulder.	3.38	MA
4. Mood swings, difficulty making decisions, concentration, and memory impairment.	2.92	MA
5. That my sex drive is lower, can experience hormonal changes such in menstrual cycle, acne, etc.	2.58	MA
AVM	**3.08**	**MA**

Legend:

Statistical Range	Transmuted Rating
4.50 – 5.00	Strongly Agree (SA)
3.50 – 4.49	Agree (A)
2.50 – 3.49	Moderately Agree (MA)
1.50 – 2.49	Disagree (D)
1.00 – 1.49	Strongly Disagree (SD)

As gleaned from the table, the highest indicators are item numbers 1 and 3, "fatigued or tired even when I am supposed to be relaxing" and "increase muscular aches and pains especially in the neck, head, lower back, and shoulder" with a weighted mean of 3.44 and 3.38, or "Moderately Agree" It reflects that the ER nurses encounter exhaustion. At the same time, they perform their duties due to the workload needing to be lighter in their areas. Other factors that make them fatigued are related to many consultations and admissions. As mentioned by Jennings (2018), work stress in nursing identified four sources of anxiety among nurses: patient care, decision-making, taking responsibility, and change. The nurse's role has long been regarded as stress-filled based on the physical labor, human suffering, work hours, staffing, and interpersonal relationships central to nurses' work.

The lowest indicator is item number 5, "that my sex drive is lower, can experience hormonal changes such in the menstrual cycle, acne, etc." with a weighted mean of 2.58 or "Moderately Agree." It showed that the ER nurses slightly experience symptoms of hormonal changes since, while on duty, the ER nurse must be free from untoward symptoms so she can focus on the nursing she performs. Sometimes, nurses report for duty even if they do not feel well because of understaffing, and nobody will receive the area. However, nurses are used to it because it is their calling to care for patients.

Overall, the Factors Preceding Workplace Distress among Emergency Room Nurses, along with physical stress, got an average weighted mean of 3.08, or "Moderately Agree." this implies that the ER nurses encounter tiredness and other manifestations. Still, they ensure they can manage them so their patient care will not be affected. Shah 2021 found in their studies that nurses who reported leaving their current employment reported leaving because of burnout. The hospital setting and working more than 20 hours per week were associated with greater odds of burnout.

Moreover, Table 6 presents the factors preceding workplace distress in an Emergency. Room Nurses along work stress.

As gleaned from the table, the highest indicator is item number 2, "that as if listening to my patient/co-workers even though I am preoccupied with my thoughts," with a weighted mean of 2.86, or "Moderately Agree." It reflects that the ER nurse experienced confusion because of the many activities she did for patients, and at times, she missed eating her meals to finish, especially those urgent doctor's orders. According to Jennings (2018), work stress and burnout remain significant concerns among nurses, affecting individuals and organizations. For the individual nurse, regardless of whether stress is

perceived positively or negatively, the neuroendocrine response yields physiologic reactions that may ultimately contribute to illness. In healthcare organizations, work stress may contribute to absenteeism and turnover, which detract from the quality of care.

Table 6
Factors Preceding Workplace Distress among Emergency Room Nurses Along Relationship at Work Stress
n=50

Indicators	WM	TR
1. It so easy to find fault and criticize others rather than praising even if it is deserved.	2.70	MS
2. That as if listening to my patient/co-workers even though I am preoccupied with my own thoughts.	2.86	MA
3. Irritated or angry if the patient/co-worker when they reputedly asked questions.	2.52	MA
4. Unfair or being disrespected among co-employees in terms of treatment.	2.36	MA
5. Mismatch on workplace and my personal values to co-employees.	2.70	MA
AWM	**2.63**	**MA**

Legend:

Statistical Range	Transmuted Rating
4.50 – 5.00	Strongly Agree (SA)
3.50 – 4.49	Agree (A)
2.50 – 3.49	Moderately Agre (MA)
1.50 – 2.49	Disagree (D)
1.00 – 1.49	Strongly Disagree (SD)

The lowest indicator is item 4, “unfair or being disrespected among co-employees in terms of treatment,” with a weighted mean of 2.36 or “Moderately Agree.” It showed that the ER nurses sometimes perceived they were disrespected because everybody was busy. The lowest indicator is item 4, “unfair or being disrespected among co-employees in terms of treatment,” with a weighted mean of 2.36 or “Moderately Agree.” It showed that the ER nurses sometimes perceived they were disrespected because everybody was busy.

Overall, the factors causing workplace distress among emergency room nurses and work stress had an average weighted mean of 2.63, or “Moderately Agree.” It connotes that ER nurses experience different kinds of work-related stress, which is considered normal for nurses because of the work overload they encounter, especially in the emergency room. Nurses encounter much stress but are ready to fight it away to give their nursing care.

Summary of Factors Preceding Workplace Distress among Emergency Room Nurses

Table 7 presents the factors preceding workplace distress among Emergency Room Nurses.

As gleaned from the table, among the factors preceding workplace distress among ER nurses, the highest areas of stress are management and physical stress, with a weighted mean of 3.21 and 3.08. It reflects that it affected them more since they encountered fatigue, had muscular pains, and due to heavy workloads, at times, they thought of resigning from their jobs. According to Thompson (2023), stress among nurses is one of the most underappreciated yet impactful issues nurses face. It happens in a nurse's work and personal life. The emotional demands are boundless, and the physical demands/fatigue can be burdensome. This stress often affects the health of nurses and sometimes even the outcomes of patients and patient care.

Table 7
Summary of Factors Preceding Workplace Distress among Emergency Room Nurses
n=50

Aspect	WM	TR
Time Stress	2.93	MA
Organizational Culture Stress	2.48	MA
Management Stress	3.21	MA
Physical Stress	3.08	MA
Relationship at Work Stress	2.63	MA
OWM	**2.86**	**MA**

Legend:

Statistical Range	Transmuted Rating
4.50 – 5.00	Strongly Agree (SA)
3.50 – 4.49	Agree (A)
2.50 – 3.49	Moderately Agree (MA)
1.50 – 2.49	Disagree (D)
1.00 – 1.49	Strongly Disagree (SD)

Organizational culture stress is the lowest factor preceding workplace distress, with a weighted mean of 2.48. The study revealed that ER nurses consider this the lowest because they love their work even if their salaries are not comparable to those of other nurses, especially those in the government sector. Nurses are patient in their work because this is their bread and butter and learning experience.

Overall, the factors causing workplace distress among emergency room nurses resulted in a weighted mean of 2.86, or "Moderately Agree." It implies that ER nurses experience reasonable types of stress while they are in the workplace. Stress contributes to the growth of nurses since it is a regular occurrence while on duty. As mentioned in the article of Advent Health University (2020), stress can lead to poor sleep, contributing to

more stress. Eating healthy foods and exercising can help break the cycle. Finding time to exercise can be difficult, mainly when nurses already work long hours doing physically demanding work, but the benefits are substantial. Exercise releases endorphins and boosts serotonin levels, improving mood, appetite, and sleep cycles.

Part III. Perceived Impact of Workplace Distress to the Performance of Emergency Room Nurses

Table 8 presents the perceived impact of workplace distress on the performance of ER nurses.

Table 8
Perceived Impact of Workplace Distress to the Performance of Emergency Room Nurses
n=50

Indicators Workplace distress causes me to feel …	**WM**	**TR**
1. Job burn-out on the tasks that I am assigned.	2.86	MA
2. Low self-esteem in myself and to other colleagues and clients.	2.88	MA
3. Lacking of attention on my work.	2.64	MA
4. Having frequent absenteeism.	2.18	D
5. Irritated most of the time.	2.20	D
6. Depressed or having anxiety.	2.38	D
7. I am ill or having a disease.	2.50	MA
8. To loss my productivity.	2.48	D
9. Having low performance quality and output.	2.34	D
10. Having sleep disturbances, short temper, and difficulty concentrating.	3.24	MA
AVM	**2.57**	MA

Legend:

Statistical Range	**Transmuted Rating**
4.50 – 5.00	Strongly Agree (SA)
3.50 – 4.49	Agree (A)
2.50 – 3.49	Moderately Agree (MA)
1.50 – 2.49	Disagree (D)
1.00 – 1.49	Strongly Disagree (SD)

As gleaned from the table, the highest among the indicators are items numbers 1 and 2, “job burn-out on the tasks that I am assigned,” and “low self-esteem in myself and to other colleagues and clients,” with a weighted mean of 2.86 and 2.88, or “Moderately Agree.” It revealed that it has a significant impact on burnout in their duties, and the feeling of having low self-confidence may be related to being overworked. Nurses are used to encountering stress, and they know what to do to relieve their stress. They are adjustable to any situation they meet in the area, especially in the emergency room.

The respondents disagreed on frequent absenteeism, being irritated, having anxieties, losing productivity, and having low-performance quality with a descriptive equivalent of “Disagree.” As a nurse, frequent absences are not allowed unless excusable because the out-gong shift will be affected since nobody will receive the endorsement. There are feelings of anxiety, but that is only temporary since nurses can quickly adapt to any situation while on duty.

Overall, the impact of workplace distress on the performance of ER nurses got an average weighted mean of 2.57 or “Moderately Agree.” It connotes that the ER nurses perceived the impact of work-related stress as reasonable because it is part of their duty to experience stress on duty. As cited in the article at Advent Health University (2023), nurses’ negative emotions, such as fear, anxiety, or frustration, are often concealed to project the compassion, confidence, and professionalism necessary to perform their jobs. Such dissonance between feelings and outer appearances can contribute significantly to mental fatigue and stress.

Part IV. Differences in the Factors Preceding Workplace Distress Among Emergency Room Nurses

Table 9-16 shows the differences in the factors preceding workplace distress among emergency room nurse.

Table 9 presents the computed F-values along time stress, management stress, physical stress and relationship at work stress provided significance values which are higher than the set .05 level of significance.

Table 9
ANOVA Results on the Difference in the Factors Preceding Workplace Distress among Emergency Room Nurses across Age

Aspect	Source of Variation	Sum of Squares	df	Mean Squares	F-value	Sig	Remarks
Time Stress	Between Groups	1.635	2	.817	1.547	.223	Not Significant
	Within Groups	24.826	47	.528			
	Total	26.461	49				
Organizational Culture Stress	Between Groups	3.832	2	1.916	4.873	.012	Significant
	Within Groups	18.479	47	.393			
	Total	22.311	49				
Management Stress	Between Groups	.982	2	.491	.840	.438	Not Significant
	Within Groups	27.451	47	.584			

	Total	28.433	49				
Physical Stress	Between Groups	.700	2	.350	.668	.518	Not Significant
	Within Groups	24.651	47	.524			
	Total	25.351	49				
Relationship at Work Stress	Between Groups	1.910	2	.955	2.061	.139	Not Significant
	Within Groups	21.771	47	.463			
	Total	23.681	49				
Overall	Between Groups	1.481	2	.741	2.057	.139	Not Significant
	Within Groups	16.925	47	.360			
	Total	18.406	49				

This leads to acceptance of the null hypothesis. Significant difference exists along organizational culture stress. Their age affects relationship at work that causes distress among emergency room nurses. As compared to the older nurses, the young ones are still adapting to the conditions in the ER since they are in the service for few years. Gradually they will learn to adapt to any challenges encountered in caring for different types of patients.

Table 10
Scheffe Test Results on the Significant Difference in the Factors Preceding Workplace Distress among Emergency Room Nurses across Age

Aspect	Compared Groups	Mean Difference	Sig
Organizational Culture Stress	21-30 vs 31-40	.755	.012

A significant positive mean difference exists between 21-30 and 31-40 nurses. The younger age bracket has been experiencing organizational culture stress compared to the older ones.

This might be related to their experience since they are still in the service for a few years, learning to adapt to their work environment compared to the older nurses. They are earning their experiences, but once they master all the ER competencies, they will slowly learn to know the ins and outs of the ER.

Table 11 presents the difference in the factors preceding workplace distress among emergency room nurses across genders.

Table 11
t-Test Results on the Difference in the Factors Preceding Workplace Distress among Emergency Room Nurses across Gender

Aspect	Gender	n	Mean	Mean Difference	Standard Error Difference	Df	t-value	Sig	Remarks
Time Stress	Male Female	23 27	2.91 2.94	-.028	.211	48	-.131	.896	Not Significant
Organizational Culture Stress	Male Female	23 27	2.40 2.54	-.141	.192	48	-.732	.468	Not Significant
Management Stress	Male Female	23 27	3.31 3.13	.187	.217	48	.863	.392	Not Significant
Physical Stress	Male Female	23 27	3.09 3.07	.020	.206	48	.098	.922	Not Significant
Relationship at Work Stress	Male Female	23 27	2.68 2.59	.093	.199	48	.468	.642	Not Significant
Overall	Male Female	23 27	2.88 2.85	.026	.176	48	.150	.881	Not Significant

The computed t-values suggest acceptance of the null hypothesis. Male and female emergency room nurses experience the same types of stress that precede their workplace distress. Male and female nurses experience the same hardships in attending to patients in the emergency room. Too much stress is encountered in the ER because it is the first step when a patient goes to the hospital. Not only are patients attended to, but including relatives and significant others who are with them. Sometimes, there are very demanding watchers to the extent that they even demand so many things from the nurses.

Table 12 shows the difference in the factors preceding workplace distress among emergency room nurses across civil status. All the computed t-values have generated significance values higher than the set .05 significance level.

Table 12
t-Test Results on the Difference in the Factors Preceding Workplace Distress among Emergency Room Nurses across Civil Status

Aspect	Gender	n	Mean	Mean Difference	Standard Error Difference	df	t-value	Sig	Remarks
Time Stress	Single Married	23 27	2.88 2.97	-.092	.210	48	-.438	.663	Not Significant
Organizational Culture Stress	Single Married	23 27	2.40 2.54	-.141	.192	48	-.732	.468	Not Significant
Management Stress	Single Married	23 27	3.20 3.22	-.022	.218	48	-.102	.919	Not Significant
Physical Stress	Single Married	23 27	3.08 3.07	.004	.206	48	.020	.984	Not Significant
Relationship at work Stress	Single Married	23 27	2.52 2.72	-.197	.197	48	-.998	.324	Not Significant
Overall	Single Married	23 27	2.82 2.91	-.090	.175	48	-.511	.612	Not Significant

Therefore, there is no significant difference in the time stress, organizational culture stress, management stress, physical stress, and relationship-at-work stress experienced by the emergency room nurses. The civil status of the nurses does not affect these factors preceding their workplace distress, implying that single and married nurses experience the same stress. Nurses attend to the same tasks while attending patients in the ER. They attend to different types of patients. Some are critical, and some need emergency care.

Table 13 displays the test results of the difference in the factors preceding workplace distress among emergency room nurses across the highest educational attainment.

Table 13
ANOVA Results on the Difference in the Factors Preceding Workplace Distress among Emergency Room Nurses across Highest Educational Attainment

Aspect	Source of Variation	Sum of Squares	Df	Mean Squares	F-value	Sig	Remarks
Time Stress	Between Groups	.538	2	.269	.488	.617	Not Significant
	Within Groups	25.922	47	.552			
	Total	26.461	49				
Organizational Culture Stress	Between Groups	.082	2	.041	.086	.917	Not Significant
	Within Groups	22.229	47	.473			
	Total	22.311	49				
Management Stress	Between Groups	.669	2	.335	.567	.571	Not Significant
	Within Groups	27.763	47	.591			
	Total	28.433	49				
Physical Stress	Between Groups	.546	2	.273	.517	.600	Not Significant
	Within Groups	24.805	47	.528			
	Total	25.351	49				
Relationship at Work Stress	Between Groups	.450	2	.225	.456	.637	Not Significant
	Within Groups	23.230	47	.494			
	Total	23.681	49				
Overall	Between Groups	.319	2	.160	.414	.663	Not Significant
	Within Groups	18.087	47	.385			
	Total	18.406	49				

The computed F-values generated significance values that were all higher than the set .05 significance level. Nurses experience the same effect of time, organizational, management, physical, and relationship-at-work stress and are unaffected by the educational background nurse. It implies that regardless of the academic qualifications of the nurses, they experience different types of stress. When nurses are employed in the emergency room, they are expected to be equipped with the competencies needed in the ER since they undergo related seminars on emergency nursing.

Table 14 presents the difference in the factors preceding workplace distress among emergency room nurses across monthly family income. All the computed F-values have generated significance values higher than the set .05 level of significance.

Suggests acceptance of the null hypothesis. No significant difference exists in the factors preceding workplace distress among emergency room nurses, especially when monthly income is considered. It implies that nurses render the utmost care to their patients regardless of their salaries. They render the needed care to all patients admitted to the ER as part of their nursing responsibilities. Nurses patiently give their care when they are in front of patients.

Table 14
ANOVA Results on the Difference in the Factors Preceding Workplace Distress among Emergency Room Nurses across Monthly Family Income

Aspect	Source of Variation	Sum of Squares	df	Mean Squares	F-value	Sig	Remarks
Time Stress	Between Groups	.590	3	.197	.350	.790	Not Significant
	Within Groups	25.871	46	.562			
	Total	26.461	49				
Organizational Culture Stress	Between Groups	.354	3	.118	.247	.863	Not Significant
	Within Groups	21.957	46	.477			
	Total	22.311	49				
Management Stress	Between Groups	.169	3	.056	.092	.964	Not Significant
	Within Groups	28.264	46	.614			
	Total	28.433	49				
Physical Stress	Between Groups	.551	3	.184	.341	.796	Not Significant
	Within Groups	24.800	46	.539			
	Total	25.351	49				
Relationship at Work Stress	Between Groups	.933	3	.311	.629	.600	Not Significant
	Within Groups	22.748	46	.495			
	Total	23.681	49				

Overall	Between Groups	.230	3	.077	.194	.900	Not Significant
	Within Groups	18.176	46	.395			
	Total	18.406	49				

Table 15 discloses the test results for differences in the factors preceding workplace distress among emergency room nurses across work status. No significant difference exists between engagement stress, physical stress, and relationship-at-work stress.

However, significant differences exist between time and organizational culture stress across work statuses. Work status affects how emergency room nurses respond to time stress and organizational culture stress. This implies that nurses are significantly affected in the ER because most patients go there, sometimes making them think of filing their leave of absence or resigning from their jobs because of job burnout.

Table 15
ANOVA Results on the Difference in the Factors Preceding Workplace Distress among Emergency Room Nurses across Work Status

Aspect	Source of Variation	Sum of Squares	df	Mean Squares	F-value	Sig	Remarks
Time Stress	Between Groups	5.838	3	1.946	4.341	.009	Significant
	Within Groups	20.623	46	.448			
	Total	26.461	49				
Organizational Culture Stress	Between Groups	4.803	3	1.601	4.207	.010	Significant
	Within Groups	17.508	46	.381			
	Total	22.311	49				
Management Stress	Between Groups	2.474	3	.825	1.462	.237	Not Significant
	Within Groups	25.958	46	.564			
	Total	28.433	49				
Physical Stress	Between Groups	3.785	3	1.262	2.691	.057	Not Significant
	Within Groups	21.566	46	.469			
	Total	25.351	49				
Relationship at Work Stress	Between Groups	1.440	3	.480	.993	.404	Not Significant
	Within Groups	22.240	46	.483			

	Total	23.681	49				
Overall	Between Groups	3.193	3	1.064	3.218	.031	Significant
	Within Groups	15.214	46	.331			
	Total	18.406	49				

Nurses come and go in the hospital because they sometimes look for better job opportunities. It is a fact that nurses' salaries are not competitive compared to other professionals. Most nurses apply abroad for better wages and to contribute to their quality of life.

Table 16 shows the results of the Scheffe test to determine the groups that have demonstrated significant differences along time stress and organizational culture stress across work status.

Table 16
Scheffe Test Results on the Significant Difference in the Factors Preceding Workplace Distress among Emergency Room Nurses across Work Status

Aspect	Compared Groups	Mean Difference	Sig
Time Stress	Contractual vs Casual	.862	.039
	Contractual vs Regular	.918	.027
Organizational Culture Stress	Contractual vs Regular	.920	.014
Overall	Contractual vs Regular	.745	.041

The significant positive mean difference indicates that the first group in the compared groups has higher mean values than the second group. This means that contractual employees have experienced greater time stress than casual and regular employees.

Meanwhile, contractual employees have experienced organizational culture stress more than regular employees. It implies that those contractual employees think that since they are not regular in their jobs, they have the mentality that they can be removed from the service depending on their performance. They felt they had no tenure security, contributing to their stress and sometimes affecting their job performance.

Part V. Relationship Between the Factors Preceding Workplace Distress among Emergency Room Nurses and their Profile Variables

Table 17 shows the relationship between the factors preceding workplace distress among emergency room nurses and their profile variables. A significant relationship exists between time stress, work status, and physical stress with work status.

Relationship Between the Factors Preceding Workplace Distress among Emergency Room Nurses and their Profile Variables

TABLE 17	Time Stress		Organizatio-nal Culture Stress		Managem e-nt Stress		Physical Stress		Relationshi -p at Work Stress	
Profile Variables	**r-value**	**sig**	**r-value**	**sig**	**r-value**	**sig**	**r-value**	**sig**	**r-value**	**sig**
Age	-.245	.087	**-.330***	.019	-.180	.210	-.153	.289	-.245	.086
Gender	.019	.896	.105	.468	-.124	.392	-.014	.922	-.067	.642
Civil Status	.063	.663	.105	.468	.015	.919	-.003	.984	.143	.324
Highest Educational Attainment	-.089	.539	-.054	.710	-.140	.334	-.140	.331	.020	.892
Monthly Family Income	.092	.525	.083	.566	.017	.907	.052	.720	.178	.217
Work Status	**-.332***	.018	-.160	.266	.154	.284	**-.282***	.047	-.079	.586

The negative R- R-values indicate an indirect relationship. The higher the work status of the emergency room nurse, the less time stress and physical stress they experience. No significant relationship exists between the factors preceding workplace distress among emergency room nurses and the rest of the profile variables. This implies that ER nurses seldom encounter stress when busy with their tasks since they are much more focused on their work. We know that nurses work very fast to revive or give emergency care to clients. Once a nurse is in front of their patients, they are so empathetic and want faster recovery.

PROPOSED STRESS MANAGEMENT PROGRAM

General objectives: The proposed intervention program will equip employees with practical tools and strategies to effectively manage workplace stress, enhance resilience, and promote overall well-being. They are designed to improve the ER nurses' wellness program to cope with and minimize work-related stress.

Activity	Objective	Time Table
1. Educational workshops	• To conduct workshops covering topics such as awareness, identifying stressors, understanding the physiological and psychological effects of stress, and developing coping strategies. • Provide education on the importance of work-life balance, time management, and boundary setting to prevent burnout.	January 2025
2. Mindfulness and Relaxation Techniques	• Offer mindfulness meditation sessions to teach employees relaxation techniques, deep breathing exercises, and mindful practices to reduce stress levels and promote emotional regulation	March 2025

	• Provide resources such as guided meditation recordings and mindfulness apps for ongoing practice.	
3. Stress Reduction Activities	• Organize stress-reduction activities such as yoga classes, tai chi sessions, or nature walks to promote physical activity, relaxation, and stress relief. • Encourage participation in recreational activities and hobbies outside of work to promote leisure and enjoyment.	May 2025
4. Employees Assistance Program (EAP)	• Implement an EAP to provide confidential counseling services and support for employees experiencing personal or work-related stressors, mental health challenges, or life difficulties. • Ensure access to qualified counselors or therapists who can provide	July 2025

	individualized support and referrals as needed.	
5. Social support and connection	• Foster a supportive work environment by encouraging peer support networks, team-building activities, and opportunities for social connection. • Facilitate open communication channels and encourage employees to seek support from colleagues, supervisors, or HR personnel when needed.	September 2025
6. Wellness Resources and Policies	• Provide access to resources such as self-help books, online articles, and wellness newsletters addressing stress management, resilience building, and work-life balance.	November 2025

Expected Outcomes

- Increased awareness and understanding of workplace stress among ER nurses.
- Improved ability to identify and manage stressors effectively.
- Enhanced utilization of stress management techniques and coping strategies.
- Reduced absenteeism and turnover rates among ER nursing staff.
- Enhanced overall well-being, job satisfaction, and resilience among ER nurses.
- Creation of a supportive work environment that promotes open communication and mutual support.

Implementing this holistic stress management program will equip ER nurses with the essential tools and resources needed to excel in their demanding roles while prioritizing their health and well-being. By working collaboratively, we aspire to cultivate a resilient and supportive workplace culture that enhances patient care and promotes overall staff satisfaction. Together, we can create an environment where nurses feel empowered, supported, and valued, ultimately leading to improved outcomes for patients and caregivers.

Conclusions

Based on the study's findings, the following are now concluded:

The ER nurses are young adults, female-dominated, into marital relationships, did not pursue post-graduate education, earn an average salary, are mostly casuals, and have contractual status.

The respondents' stress is highest on management and physical stress and lowest on organizational culture and relationship work stress.

The impact of workplace distress on their performance has caused burnout, sleep disturbances, short temper, and difficulty concentrating.

The younger age bracket experienced organizational culture stress compared to the older ones. Contractual employees claim to have experienced organizational culture stress more than regular employees. Work status affects emergency room nurses' response to time and organizational culture stress.

The higher the emergency room nurse's work status, the less time and physical stress they experience. No significant relationship exists between the factors preceding workplace distress among emergency room nurses and the rest of the profile variables.

Recommendations

Based on the conclusions offered, the following are at this moment proposed:

To be promoted to a regular position, ER nurses must continue earning experience in the area and upgrading their qualifications.

The respondents must improve their performance in the ER for management to have a reason to encourage them to higher positions and relieve their management stress.

The respondents must undergo wellness programs to relieve their burnout and physical distress.

The ER nurses, regardless of their employment status, must continue with their work to minimize their stress in the workplace.

The proposed intervention program can be adapted and implemented to relieve them of workplace distress and improve their performance in the ER

Compliance with Ethical Standards

The research on "Factors Preceding Workplace Distress and Its Impact on the Performance of Emergency Room Nurses" adheres rigorously to ethical standards for conducting research involving human participants. Ethical integrity was maintained throughout the study. Through the implementation of the following measures:

Informed Consent: All participating emergency department nurses will get thorough information about the study's goals, methods, possible risks, and advantages before their involvement. Each participant provided written consent, confirming their voluntary participation, and understanding of their rights.

Voluntary Participation: The study will be conducted only with the consent of nurses, who will be guaranteed the freedom to leave the study at any moment without repercussions.

Confidentiality: Safety precautions will be taken to protect participants' anonymity and privacy. Any identifiable information gathered from individual nurses will be anonymized to protect their privacy and treated with the utmost confidentiality.

Avoidance of Harm: To reduce the possibility of injury or discomfort to the attendees. Researchers will ensure that the questions asked in surveys or interviews are non-intrusive and considerate of the nurses' mental health.

Beneficence: The study intends to provide important insights into the elements that emergency department nurses experience before experiencing professional stress. Offering ways to reduce workplace stress and improve nursing performance is designed to help individuals and the larger healthcare community.

Approval: To guarantee adherence to ethical standards, the appropriate institution will examine and approve the research protocol, including the study design, recruiting processes, and data-collecting techniques.

Transparency: The study results will be truthful and open, guaranteeing that they are not altered or distorted to further any goal.

Respect for Participants: Throughout the study, participants' autonomy and rights will be respected, and researchers will handle them with dignity and respect.

Benefit-Risk Assessment: A comprehensive evaluation of the possible advantages and disadvantages of research participation will be carried out, and suitable strategies will be implemented to optimize benefits and reduce disadvantages for participants.

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FAMILIAL CONVENTIONALISM: EXTENT OF INFLUENCE IN CHOOSING A COURSE AMONG FRESHMAN STUDENTS OF FOUNDATION UNIVERSITY

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ABSTRACT

This paper examined the extent of influence of the family in choosing a course among freshman students of Foundation University. Given that there is already information established regarding parents' involvement in their children's education, there still is a minimal number of resources discussing specific variables such as parental involvement in career development for students entering college, and the extent of this influence in a student's college life. This study utilized the use of descriptive-correlational methods. The questionnaire was created with the use of Likert scale and interpreted through the use of Spearman's rank-order correlation and Kruskal-Wallis in testing the significant relationship between the variables. The respondents of the study were 153 freshmen students of Foundation University. This study revealed the extent of influence of the family on freshman students. According to the findings, freshmen students believed that familial conventional had a great influence on the courses that they had undertaken. And regardless of the extent of influence, data suggests that there is a significant relationship between the extent of effects of familial conventionalism and the students' perception on the effects. It was also found that a family's economic status is significant on how students perceive the effects of parental influence in choosing a college course.

Keywords: *parental influence, familial conventionalism, parental involvement, college course, career path*

INTRODUCTION

A family plays a huge role in nation-building. It may be considered as the basic unit of a society, but it carries the most responsibility in the progress of a community. This is where instilling culture takes place—the values passed down through generations are taught in a family. Another vital role of a family in the development of any nation is in the context of education. A family holds a crucial role in the educational process of a child. The expectations, influences, values taught, and overall parental involvement can be factors in the growth of young minds academically (Salac & Florida, 2022).

A study conducted in the United States by the University of Wisconsin-Madison, showed that no matter how fast the society advances, especially in the educational sector, one thing about families has not changed even a bit—the role of the family in the educational success of their children (Bogenschneider & Johnson, 2004). It may be true that in the US, adolescents are more of individualists in their way of living but in choosing a career path, they still often use their family situation as reference. A similar study conducted in Nigeria showed that parents have strong influence over the career decision-making process that their children undergo. Factors like moral values, educational level, and financial status of the parents play a huge role whether the influence will be positive or negative (Ekeng, 2022).

In the Philippines, families are known for having strong bonds and close family ties. Almost everything a Filipino does is for the family, even putting personal goals and ambitions aside. In a forum in 2021 conducted by DepEd, Secretary Leonor M. Briones stated, “Parents play a vital role in the success of the learners not only in the lessons they learn from the teachers, but also in the guidance to nurture holistically developed individuals.”. The government has continually imposed programs in both public and private schools to maintain the involvement of parents in education. Through DepEd Order No.13, s 2022 or the Omnibus Guidelines on the Regulation of Operations of the Parents-Teachers Associations (PTAs), the department ensures a stronger collaboration and a more important role for the PTA in the educational system of the country (Malipot, 2021)**.**

With all this information already established regarding parents’ involvement in their children’s education, there still is a minimal number of resources discussing specific variables such as parental involvement in career development for students entering college, and the extent of this influence in a student’s college life. This is interesting knowing that Filipinos are known to have strong bonds with their family but still a lot can be explored regarding a family’s influence unto a child in terms of choosing a career.

The researchers wanted to know if familial conventionalism played a role in the lives of Foundation University freshmen students in deciding what course to take up and the extent of influence that parents have imposed towards them. This includes the variables that may affect the decision-making process of these students in picking their chosen courses. Results of this investigation will not only offer insights to parents on how

their influence can affect the future of their children, but also be beneficial to students who are about to make the decision of choosing a career path for the future.

Research Questions

1. To what extent does the following aspects of familial conventionalism affect freshman students in choosing their course based on:
    1.1. Duties and responsibilities;
    1.2. Cultural value;
    1.3. Perception of the course/career;
    1.4. Interest; and
    1.5. Differentiation of Self?

2. What is the overall perception of students on the effects of familial conventionalism in choosing their course based on:
    2.1 emotional status; and
    2.2 being obedience?

3. Is there a significant relationship between the extent of effects of the aspects of familial conventionalism to the overall perception of students on the effects of familial conventionalism in choosing their course?

4. Is there a significant difference between the overall perception of students on the effects of familial conventionalism in choosing their course when they are grouped according to their profile based on:
    4.1. Course undertaken;
    4. 2 Family's economic status; and
    4. 3. Educational attainment of both parents?

METHODOLOGY

Research Design

The research utilized the descriptive-correlational method. It is descriptive because it identified the (a) the aspects of familial conventionalism experienced by students, (b) the background of the students' families, and (c) describe the students' perception on the effects of familial conventionalism in choosing their college course. It is also correlational because the aforementioned variables were correlated. All the data gathered are presented through tables and interpreted for a better understanding of the readers.

Research Environment

The study was conducted in Foundation University Dumaguete City. The school is headed by a University President. The university president is supported by the Chancellors and Vice Chancellors who supervises the implementation of the Continuity and Contingency plans of the university. Under the Vice Chancellors for Academic Affairs are the twelve (12) academic unit heads or the Deans and Principals of the various colleges of Foundation University. Foundation University has two campuses, one for tertiary level and the other is for the primary and secondary level.

Research Participants

The respondents of this study were bonafide freshmen students of Foundation University of the Academic year 2022-2023 regardless of the academic program that they are currently enrolled in. In choosing the respondents, the researchers get the sample size using the Yamane's Formula. The distribution of the sample respondents are as follows:

College of Criminology	30
College of Nursing	84
College of Computer Studies	18
College of Education	27
College of Arts and Sciences	17
College of Hospitality Management	48
College of Business Administration	31
College of Agriculture	14
School of Industrial Engineering	12
Total:	281

Research Instrument

The major tool that was utilized in this study is a researcher-made questionnaire. The questionnaire is divided into two (2) parts.

Part I includes the profiles of the students based on the course undertaken, family's economic status, and educational attainment of both parents.

Part II concerns the extent the following aspects of familial conventionalism affect freshman students in choosing their course based on: (1) duties and responsibilities; (2) cultural value; (3) perception of the course/career; (4) interest; and (5) differentiation of Self.

To ensure the validity of the researcher-made questionnaire, the researcher consulted at least 3 experts in the field of instruction and pedagogy. The suggestions that they had provided were considered to ensure the improvement of the questionnaire. A dry run will be conducted to 30 students to identify the reliability of the instrument. This test was regarded as the most suitable type for survey research where items were not

scored right or wrong and where each item could have different answers. This will be calculated to verify the internal consistency reliability of the items. It is a measure of the extent to which all the variables vary from 0 to 1. Higher values of alpha are more desirable and a value 0.70 is considered acceptable.

Results of the dry-run on the effect of familial conventionalism yielded a reliability coefficient of 0.94 for Duties and responsibilities, 0.91 for Cultural value, 0.93 for Perception of the course/career, 0.92 for Interest, and 0.94 for Differentiation of Self. For overall perception of students on the effects of familial conventionalism in choosing their course, the reliability coefficient was 0.87 for emotional status, and 0.82 for being obedience. The reliability coefficient of all values was 0.94 which means that items in all areas are reliable.

Data Gathering Procedure

Following the hearing for the design, the researchers worked on the corrections and suggestions given by the members of the interrogating panel. First, A letter of permission to conduct the study was sent to the deans of the different departments of Foundation University. After the endorsement of the letter of approval, the letter was presented to the teachers and respective respondents. The survey took place online with the use of Google forms in which the researchers have sent personal messages to students and shared links to teachers of Foundation University.

The results were then tallied using MS Excel and treated using a specific statistical tool generated via Jamovi Software, and was carefully analyzed and interpreted.

RESULTS

Table 1.1
The Extent of Influence of Familial Conventionalism on Freshman Students Based on Duties and Responsibilities.

Statement	wx	Verbal Descriptions	Extent of Influence
1. I perform well in scholastic activities to avoid disappointing my parents	4.29	Strongly Agree	Very High
2. I get my work done efficiently to make my parents proud.	4.16	Agree	High
3. I meet my parents' expectations on my efficiency in education.	3.96	Agree	High

4. I actively participate in class discussions because this is how my parents want me to perform in school.	3.90	Agree	High
5. I turn in my assignments on time to have additional time for studying as instructed by my parents.	3.83	Agree	High
Composite	3.98	Agree	High

Legend:	Scale	Verbal Description	Extent of Influence
	4.21 - 5.00	Strongly Agree	Very High
	3.41 - 4.20	Agree	High
	2.61 - 3.40	Moderately Agree	Moderate
	1.81 - 2.60	Disagree	Low
	1.00 - 1. 80	Strongly Agree	Very Low

As presented in Table 1.1, it can be noted that the overall composite weighted mean is 3.98 as classified as “high” extent of influence of the familial conventionalism based on the students’ duties and responsibilities. In the same data, it can be seen also that indicators stipulate those students performing the scholastic activities to avoid parents’ disappointment got the highest weighted mean of 4.29 or classified as “very high” extent of influence.

Furthermore, the remaining statements which include that they have done their work efficiently to make their parents proud, active involvement of the school activities, and submitted their assignments on time are classified as “high” extent of influence. This implies that students work their duties and responsibilities in school for their parents to be proud of them. The study is related to the study of Kazi and Akhlaq (2017), Factors Affecting Students' Career Choice, none of the respondents indicated the negative impact of family. They did, however, admit that when it came time to select and exercise influence while continuing to meet their commitments, their parents had conveyed their doubts and concerns.

Table 1.2
The Extent of Influence of Familial Conventionalism on Freshman Students Based on Cultural Value.

Statement	wx	Verbal Descriptions	Extent of Influence
1. I have to take a course that should lead me to be able to provide for my family when they get older.	4.41	Strongly Agree	Very High
2. I respect my parents because they know what’s best for me.	4.33	Strongly Agree	Very High

3. I follow my parent's decisions out of responsibility as their child	3.93	Agree	High
4. I believe that my parent's decisions will always supersede my own.	3.61	Agree	High
5. I choose my course out of a sense of duty to my family	3.59	Agree	High
Composite	3.98	Agree	High

Legend:	Scale	Verbal Description	Extent of Influence
	4.21 - 5.00	Strongly Agree	Very High
	3.41 - 4.20	Agree	High
	2.61 - 3.40	Moderately Agree	Moderate
	1.81 - 2.60	Disagree	Low
	1.00 - 1. 80	Strongly Agree	Very Low

Table 1.2 shows the extent of influence of familial conventionalism based on cultural values in choosing a course among freshman students which has a composite weighted mean of 3.98. Indicators such as students taking a course that should lead them to be able to provide for their family when they get older and students respect to their parents because they know what's best for them has a weighted mean of 4.41 and 4.33, respectively which indicates that the extent of influence of familial conventionalism is "very high."

Moreover, indicators such as students following their parents out of responsibility as their child, parent's decisions will always supersede their own, and choosing their course out of a sense of duty to my family are distinguished as "high" extent of familial influence. This data shows that students agree that cultural values as well as parent's decisions influence in choosing a course.

Table 1.3
The Extent of Influence of Familial Conventionalism on Freshman Students Based on Perception on the Course/Career.

Statement	wx	Verbal Descriptions	Extent of Influence
1. I know that I have chosen the right course because my parents also approved that course that I am undertaking.	4.33	Strongly Agree	Very High
2. I am fully aware of my direction in pursuing this course even if this is the choice of my family.	3.69	Agree	High

3. I am confident in my ability to succeed in my current course even if this is my parents' choice.	3.63	Agree	High
4. I know that obeying my parents' decisions to choose my course was appropriate.	3.61	Agree	High
5. I had never felt uncertain about my course even if this is the course that was influenced by my parents.	3.39	Moderately Agree	Moderate
Composite	3.98	Agree	High

Legend:	Scale	Verbal Description	Extent of Influence
	4.21 - 5.00	Strongly Agree	Very High
	3.41 - 4.20	Agree	High
	2.61 - 3.40	Moderately Agree	Moderate
	1.81 - 2.60	Disagree	Low
	1.00 - 1. 80	Strongly Agree	Very Low

In Table 1.3, it is presented that the overall composite weighted mean for the extent of influence of familial conventionalism on freshman students based on perception on the course/career is 3.98 which indicates a "high" extent of influence. The most significant indicator which has a weighted mean of 4.33 that has a very high extent of influence is that students believe that they have chosen the right course that they are undertaking because their parents has approved of it.

However, the statements of students being fully aware of the direction in pursuing their course, confident in their ability to succeed, and obeying their parents' decision to choose their course was appropriate has a "high" extent of influence. The lowest weighted mean at 3.39 where students moderately agree that they have not felt uncertain about their course despite being influenced by their parents. This implies that students value the involvement of significant others, like their parents or other family members, during their career decision-making process.

Table 1.4
The Extent of Influence of Familial Conventionalism on Freshman Students Based on Interest.

Statement	wx	Verbal Descriptions	Extent of Influence
1. I was the one who chose my course with the guidance of my parents.	4.35	Strongly Agree	Very High
2. I had communicated with my parents in choosing my course.	4.35	Strongly Agree	Very High

3. I had taken my course because it interests me as well as my parents.	4.30	Strongly Agree	Very High
4. I feel responsible for choosing my course because this was both agreed by me and my parents.	4.33	Strongly Agree	Very High
5. I choose my career because I have family members with the same degree/career path.	3.41	Agree	High
Composite	4.15	Agree	High

Legend:	Scale	Verbal Description	Extent of Influence
	4.21 - 5.00	Strongly Agree	Very High
	3.41 - 4.20	Agree	High
	2.61 - 3.40	Moderately Agree	Moderate
	1.81 - 2.60	Disagree	Low
	1.00 - 1. 80	Strongly Agree	Very Low

Table 1.4 shows the extent of influence of familial conventionalism on freshman students based on interest has an overall weighted mean of 4.15 which is classified as “high” extent of influence. It can be seen also that freshmen students strongly agree that they were able to choose their course with the guidance and proper communication with their parents with the weighted mean of 4.35 for both statements.

The statements such as students have taken their course because it interests them and they feel responsible in choosing their course because this was both agreed by their parents has a “very high” extent of influence. In the statements, the lowest weighted mean is 3.41. The students agree that in choosing a degree or career, familial influence or having family members of the same career affects their decisions. All in all, parental influence affects the interest of students in choosing a course in higher education.

Table 1. 5
The Extent of Influence of Familial Conventionalism on Freshman Students Based on Differentiation of Self.

Statement	wx	Verbal Descriptions	Extent of Influence
1. I look for my family’s advice when I have to make important decisions in my life.	4.11	Agree	High
2. I am aware of my strengths and weaknesses, and it aligns with the career my parents want for me.	4.04	Agree	High
3. I have my own identity but I still went with what my parents want for me.	3.16	Moderately Agree	Moderate

4. I have not yet found my purpose in life so I went with what my parents want because they know better	3.03	Moderately Agree	Moderate
5. I'd rather choose a different career based on my own purpose if only it weren't because of my parents' decision.	2.97	Moderately Agree	Moderate
Composite	3.46	Agree	High

Legend:	Scale	Verbal Description	Extent of Influence
	4.21 - 5.00	Strongly Agree	Very High
	3.41 - 4.20	Agree	High
	2.61 - 3.40	Moderately Agree	Moderate
	1.81 - 2.60	Disagree	Low
	1.00 - 1. 80	Strongly Agree	Very Low

The data in table 1.5 shows the extent of influence of familial conventionalism on freshman students based on differentiation of self with an overall composite weighted mean of 3.46 which is classified as "high" extent of influence. Students agree that they turn to their parents for advice when making life-changing decisions as presented in the first indicator with a "high" extent of influence.

Furthermore, for the indicators where students have their own identity but still follow their parents' decision, they have not yet found their purpose, and on choosing a different career based on their own purpose if only it was not because of their parent's decision all has a "moderate" extent of influence. This implies that there is a disconnect between some students in their desired career path and their chosen career path.

Table 2.1
Overall Perception of Students on the Effects of Familial Conventionalism in Choosing their Course based on Emotional Status.

Statement	wx	Verbal Descriptions	Extent of Influence
1. I have no regrets when it comes to the course that I am currently taking up because my parents approved it.	4.14	Agree	High
2. I believe that my college course is aligned with what my purpose in life is and I have my parents to thank for that	4.09	Agree	High
3. I believe that I can succeed in life through the course that I am taking up which my parents had great influence on.	4.07	Agree	High

4. I feel completely happy of where I am academically and a huge part of it is my parents' influence.	3.95	Agree	High
5. I feel like I am exactly where I am supposed to be academically because my parents had a huge influence on it	3.87	Agree	High
Composite	4.02	Agree	High

Legend:	Scale	Verbal Description	Extent of Influence
	4.21 - 5.00	Strongly Agree	Very High
	3.41 - 4.20	Agree	High
	2.61 - 3.40	Moderately Agree	Moderate
	1.81 - 2.60	Disagree	Low
	1.00 - 1. 80	Strongly Agree	Very Low

The Table 2.1 shows the overall perception of students on the effects of familial conventionalism in choosing their course based on emotional status and it has a composite weighted mean of 4.02 which is classified as "high" extent of influence. The factor with the highest extent of influence and has a weighted mean of 4.14 is that which students say they don't have any regrets with their chosen course due to their parent's approval.

On the other hand, the remaining indicators such as students believing that their college course is aligned with their purpose in life, and the influence and support of their parents in choosing their course and this affects their performance in school all have a "high" extent of influence. This implies that expectations can come from both parents and their children.

Table 2.2
Overall Perception of Students on the Effects of Familial Conventionalism in Choosing their Course based on Obedience

Statement	wx	Verbal Descriptions	Extent of Influence
1. I respect the regulations set by my parents that led me to my current course.	4.19	Agree	High
2. I heed my parents' guidance regarding the course that I am taking for conformity.	3.94	Agree	High
3. I believe that it is my duty to follow the decisions they make when it comes to my studies.	3.89	Agree	High

4. I am compelled to follow my parents' decision for my education because they pay for it.	3.80	Agree	High
5. I act in accordance with the course that my parents arranged for me to have their full support.	3.78	Agree	High
Composite	3.92	Agree	High

Legend:	Scale	Verbal Description	Extent of Influence
	4.21 - 5.00	Strongly Agree	Very High
	3.41 - 4.20	Agree	High
	2.61 - 3.40	Moderately Agree	Moderate
	1.81 - 2.60	Disagree	Low
	1.00 - 1. 80	Strongly Agree	Very Low

As presented in Table 2.2, this shows the overall perception of students on the effects of familial conventionalism in choosing their course based on obedience which has an overall composite weighted mean of 3.92 and is classified as "high" extent of influence. The highest weighted mean is at 4.19 and shows that students respect the regulations set which led them to choosing their current course.

For the remaining indicators such as asking for parent's guidance, following their parents' decision when it comes to their studies, and acting in accordance with the course that their parents arranged for them, this all has a "high" extent of influence for the students. From this, we can conclude that obedience or being obedient to their parents has a high influence on their course/career preferences.

Table 3

Correlation between the extent of effects of the aspects of familial conventionalism to the overall perception of students on the effects of familial conventionalism in choosing their course.

Variables Correlated to the Overall Perception of Students	Computed r_s	p-value	Decision	Remark
Duties and Responsibilities	0.5752 (strong)	0.000	Reject H_0	Significant
Cultural Value	0.5212 (strong)	0.000	Reject H_0	Significant
Perception of the Course/Career	0.6221 (strong)	0.0045	Reject H_0	Significant
Interest	0.5018 (strong)	0.000	Reject H_0	Significant

Differentiation of Self	0.4984 (moderate)	0.000	Reject H_0	Significant

level of significance = 0.05 and 151 degrees of freedom

Value of r		Strength of Relationship
Between	± 0.50 to ± 1.00	± strong relationship
Between	± 0.30 to ± 0.49	± moderate relationship
Between	± 0.10 to ± 0.29	± weak relationship
Between	± 0.01 to ± 0.09	± very weak relationship

Table 3 presents the correlation between the extent of effects of the aspects of familial conventionalism to the overall perception of students on the effects of familial conventionalism in choosing their course. Using the Spearman Rank Order Correlation, the result shows that the p-values (0.000 and 0.0045) of the variables are less than the level of significance (0.05), thus the null hypothesis is rejected. This means that there is a significant and strong relationship between the extent of effects of the aspects of familial conventionalism to the overall perception of students on the effects of familial conventionalism in choosing their course. It indicates that there is a large and strong link between what a person does or works on and what their immediate environment or nature informs him or her about what is ethical.

Familial conventionalism became a role in student selection. This indicates the significance familial conventionalism is instilling in an individual and creating a value and a standard for him as ethical. Subsequently, the study found that the factors that follow, Duties and Responsibilities, Cultural Value, Perception of the Course/Career, Differentiation of Self, and Interest, have a significant influence on how an individual determines what to do and what path to pursue. According to the findings, familial conventionalism became a selection factor for students.

Table 4.1

Correlation of significant difference between the overall perception of students on the effects of familial conventionalism in choosing their course when they are grouped according to their profile based on course undertaken

College Department	n	Mean Rank	Median	H	p-value	Decision	Remark
College of Education	32	76.2	4.00	1.25	0.8698	Fail to Reject H_0	Not Significant
College of Agriculture	12	89.2	4.05				
College of Arts and Sciences And College of Business	22	74.7	3.80				

Administration							
College of Criminology And School of Industrial Engineering	19	80.6	4.00				
College of Nursing And College of Hospitality Management	68	74.9	4.00				

level of significance = 0.05

Table 4.1 presents the data in analyzing the difference between the overall perception of students on the effects of familial conventionalism in choosing their course when they are grouped according to their profile based on course undertaken. Using Kruskal Wallis Test, it reveals that there is no significant difference between the overall perception of students on the effects of familial conventionalism in choosing their course when they are grouped according to course undertaken ($H=1.25$; p-value>0.05).

On the other hand, there is a very weak relationship between the overall perception of students on the effects of familial conventionalism in choosing their course when they are grouped according to their profile based on course undertaken. Continuing the investigation connection between the overall perception of students on the effects of familial conventionalism in choosing their course when they are grouped according to their profile based on course undertaken. The study by Kazi and Akhlaq (2017) titled Factors Affecting Students' Career Choice found that more than half (56%) of the respondents to the present survey were interested in a career in dentistry.

These data show that, unlike prior studies, there is only an insignificant relationship between the factors. Based on their familial norms, the students' general assessment of their course is only minimal

Table 4.2
Correlation of significant difference between the overall perception of students on the effects of familial conventionalism in choosing their course when they are grouped according to their profile based on their family's economic status

Family's Monthly Income	n	Mean Rank	Median	H	p-values	Decision	Remark
(1) Below P15,000	54	85.4	4.15	11.57	0.0029	Reject H_0	Significant
(2) P15,000 - P40,000	65	62.9	3.80				
(3) Above P40,000	34	90.5	4.05				
Post Hoc Analysis Using Mann-Whitney U Test with Bonferroni Correction (0.05/3 = 0.017) Below P15,000 vs P15,000 - P40,000: p-value= 0.0069 (Significant) Below P15,000 vs Above P40,000: p-value= 0.6599 (Not Significant) P15,000 - P40,000 vs Above P40,000: p-value= 0.0027 (Significant)							

level of significance = 0.05

Table 4.2 presents the data in analyzing the difference between the overall perception of students on the effects of familial conventionalism in choosing their course when they are grouped according to their profile based on their family's economic status. The data reveal that the p-value (0.0029) is less than the level of significance (0.05). This finding allows rejection of the null hypothesis. This means that a significant difference exists among the three groups. To test which group has higher perception than the other, a post hoc analysis is applied using Mann-Whitney U Test with a Bonferroni correction applied. The results of the post hoc analysis wherein the Bonferroni correction is applied with an adjusted level of significance of 0.017 reveals that (a) Group 1 has higher perception than Group 2; (b) Group 3 has higher perception than Group 2; and (c) Group 1 has the same level of perception with Group 3.

According to Alvarado, Adriana & Stewart Ambo, Theresa. (2020), high-income students outperform other students regardless of their level of entrance, with 91.3% finishing their degrees in that time frame compared to 88% of middle-income students and 83.1% of low-income students. This means that when an individual makes a decision, it is also influenced by their assessment of their own and their family's financial situation. The study discovered that an individual uses to envision things depending on what they

believe they can do, and that if an individual comes from a wealthy household, their vision would be quite different from that of an individual from a low-income family.

The study indicates that a family's financial condition is not just considered while making decisions, but it is also connected to how parents use it as a reason for encouraging their children to seek high-paying occupations

Table 4.3.1
Correlation of significant difference between the overall perception of students on the effects of familial conventionalism in choosing their course when they are grouped according to their profile based on the educational attainment of father

Educational Attainment of Father	n	Mean Rank	Median	H	p-values	Decision	Remark
Elementary Undergraduate	6	93.5	4.20	8.06	0.0894	Fail to Reject H_0	Not Significant
Elementary Graduate And Highschool Undergraduate	15	98.3	4.40				
Highschool Graduate	37	65.3	3.80				
College Undergraduate	28	69.6	3.85				
College Graduate	67	80.3	4.00				

level of significance = 0.05

Table 4.3.1 in the previous page presents the data in analyzing the difference between the overall perception of students on the effects of familial conventionalism in choosing their course when they are grouped according to their profile based on their profile based on the educational attainment of their father. The data reveal that the p-value (0.0894) is greater than the level of significance (0.05). This finding does not allow the rejection of the null hypothesis. This means that there is no significant difference between the overall perception of students on the effects of familial conventionalism in choosing their course when they are grouped according to their profile based on their profile based on the educational attainment of their father.

Parental influence can change one's perspective, or how a person comprehends or perceives the events going on around them. A student's profession might truly be influenced by their parents. Previous study indicates that the influence the of the job or the educational attainment of the parents can be a big factor to the choice of an individual. Continuing the investigation connection between the overall perception of students on the effects of familial conventionalism in choosing their course when they are grouped according to their profile based on the educational attainment of their father these data show that, unlike prior studies, there is only an insignificant relationship between the factors.

Table 4.3.2

Correlation of significant difference between the overall perception of students on the effects of familial conventionalism in choosing their course when they are grouped according to their profile based on the educational attainment of mother

Educational Attainment of Mother	n	Mean Rank	Median	H	p-value	Decision	Remark
Elementary Undergraduate	3	85.2	4.3	6.63	0.1738	Fail to Reject H_0	Not Significant
Elementary Graduate And Highschool Undergraduate	16	93.6	4.35				
Highschool Graduate	29	75.8	4				
College Undergraduate	25	59.7	3.7				
College Graduate	80	79.2	4				

level of significance = 0.05

Table 4.3.2 presents the data in analyzing the difference between the overall perception of students on the effects of familial conventionalism in choosing their course when they are grouped according to their profile based on their profile based on the educational attainment of their mother. The data reveal that the p-value (0.1738) is greater than the level of significance (0.05). This finding does not allow the rejection of the null hypothesis. This means that there is no significant difference between the overall perception of students on the effects of familial conventionalism in choosing their course when they are grouped according to their profile based on their profile based on the educational attainment of their mother.

The study states that there is no significant difference between the overall perception of students on the effects of familial conventionalism in choosing their course when they are grouped according to their profile based on the educational attainment of their mother.

DISCUSSION

The result has shown that for aspects like duties and responsibilities, cultural value, perception of the course, interest, and differentiation of self, freshman students at Foundation University believe that familial conventionalism has had a great influence on how they chose their respective college courses. The study is related to the study of Kazi and Akhlaq (2017), Factors Affecting Students' Career Choice, none of the respondents indicated the negative impact of family. They did, however, admit that when it came time to select and exercise influence while continuing to meet their commitments, their parents had conveyed their doubts and concerns.

The data obtained revealed students' general perceptions on the effects of familial conventionalism. According to the study, emotional status and obedience connect to high parental influence, indicating that students are content with where they are in their careers, particularly if their parents have a strong influence over their decisions. According to PDP (2022), these intersections aren't the only factor impacting how people move towards the future; there's also a link between the past and the present. Family is regarded as a conviction and an ideal that serves as the basis for people's decisions.

The degree of the impacts of the features of family conventionalism on the overall view of students on the effects of familial conventionalism in choosing their course has a significant link. This means that numerous factors influence students' perceptions of how they see and select courses. Students assess their culture, responsibilities, perspective of a certain vocation, personal distinctiveness, and interest as these elements are influenced by their parents. This proves that familial customs do have an impact on an individual's viewpoint**.** Not just internal or personal elements affect perception. External factors on perception can include what others think of us, their expectations of us, and cultural norms like taboos or social conventions (HARAPPA, 2021).

The correlation of a significant difference between the overall perception of students on the effects of familial conventionalism in choosing their course when they are grouped according to their profile based on both parents' educational attainment, family's economic status, and course undertaken is demonstrated. The findings reveal that educational attainment of mother, educational attainment of father, and courses taken have no significant impact in the general view of foundation university freshman students in terms of how they take their careers. In contrast, the study discovers a considerable difference between the three groups based on the economic situation of the family. In this regard, the study of Alvarado, Adriana, and Stewart Ambo, Theresa (2020) demonstrates that a family's financial situation is not only considered when making decisions, but is also related to how parents use it as justification for encouraging their children to pursue high-paying careers.

Conclusions

The results of the data collected have shown that most of the freshmen students believe that there is great familial influence on all aspects presented in the survey. These aspects being, their duties and responsibilities, cultural values, perception of the course, interest and differentiation of the self. Data shows that there is a high extent of influence across all aspects aforementioned. In terms of familial conventionalism based on emotional status and obedience, the results also show a high extent of influence from both aspects. Though there is an identified high extent of influence in terms of familial conventionalism in choice of course, the data does not show that there is a relationship between students' perception when group according to course taken. When looking into another factor external to the students such as their parents' educational attainment, there is also no significant relationship in course decision-making. However, there was an identified relationship between their perception of familial conventionalism when taking into consideration their family's economic status. This shows that students, or young adults in general, do take into consideration the perceptions and expectations of those they consider significant figures in their life and even have them be part of the decision-making process for things as important as career choice.

As the researchers gathered the data and thoroughly discussed it, they had found that studies with similar topics will be useful in addressing the gaps in knowledge and understanding about the extent of influence that the family has on their children in terms of choosing their courses in college. There is significance in making sure that students have clarity in terms of the course they are willing to pursue and the factors that affect this. On this basis, future studies can further examine the effects of familial conventionalism on a broader sample population and try to see if there is a change in perception based on other factors not included in the current study.

Recommendations

Based on the research findings, here are some **recommendations** for educational institutions and policymakers:

1. **Parental Engagement and Guidance**:
    - **Workshops for Parents**: Organize workshops or information sessions for parents to understand the impact of their influence on students' career choices. Educate parents about the importance of supportive guidance without undue pressure.
    - **Parent-Teacher Collaboration**: Encourage open communication between parents and teachers. Teachers can provide insights into various career paths and help parents understand the changing landscape of education and professions.
2. **Career Counseling Programs**:
    - **Early Exposure**: Start career counseling early, even before college. Provide students with exposure to various career options, internships, and industry visits.
    - **Individualized Counseling**: Tailor counseling sessions to individual student needs. Address their interests, strengths, and aspirations.
3. **Holistic Decision-Making**:
    - **Beyond Familial Influence**: Encourage students to consider multiple factors beyond familial influence. These may include personal interests, aptitudes, values, and societal needs.
    - **Self-Reflection**: Help students reflect on their own motivations and passions. What excites them? What aligns with their long-term goals?
4. **Curriculum Enhancement**:
    - **Career Exploration Courses**: Integrate career exploration courses into the curriculum. These courses can introduce students to different industries, job profiles, and skill requirements.
    - **Soft Skills Development**: Emphasize soft skills (communication, adaptability, problem-solving) alongside technical knowledge. These skills are transferable across careers.
5. **Peer Influence and Support**:
    - **Peer Discussions**: Facilitate peer discussions about career choices. Students can learn from each other's experiences and perspectives.
    - **Student Ambassadors**: Appoint student ambassadors who can share their career journeys and provide guidance to peers.
6. **Awareness of External Factors**:
    - **Media Literacy**: Teach students critical media analysis. Help them recognize stereotypes and biases perpetuated by media regarding career choices.

- **Community Perception**: Address external pressures, such as societal expectations or peer opinions. Encourage students to make informed decisions based on their own values.

7. **Long-Term Vision**:
   - **Career Path Mapping**: Help students create a long-term vision for their careers. Encourage them to explore both stability and passion.
   - **Adaptability**: Prepare students for a dynamic job market. Careers evolve, and adaptability is crucial.

Compliance With Ethical Standards

Research ethics were strictly observed throughout the course of the conduct of this study. Ethical approval was obtained from the Ethical Committee of Foundation University Research Office. Moreover, informed consent was taken from each respondent included in the study before gathering any data from them. Prior to conducting this study, the researchers consulted 3 panels of experts for the necessary improvement of the research instrument that was utilized. During the study, the right to self-determination, confidentiality and anonymity, benefits, and risks of the study were observed and respected.

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FROM TRADITION TO TRANSITION: EXPLORING ACCULTURATION LEVEL AMONG WOMEN MIGRANTS IN BUKIDNON

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ABSTRACT

This study examines the level of acculturation and cultural roles of Ivatan women migrants in Bukidnon, focusing on their settlement and post-migration adaptation. Fifty-one first-generation Ivatan women were surveyed using interviews and an adapted acculturation scale. Findings reveal that these women, residing in Malinao, Kalilangan, Bukidnon for over 30 years, retained a strong ties to their language and ethnic identity. Their overall acculturation level remains low, particularly regarding language and ethnic identity preservation. Based on these findings, the study concludes that a robust ethnic identity plays a significant role in resisting external cultural influences. However, the preservation and transmission of Ivatan culture are hindered by interpersonal dynamics and technological advancements. To address these challenges, the study recommends a sociological approach to further investigate the cultural dynamics of migrant Ivatan women, with a specific focus on language and intangible cultural heritage. Enhanced research efforts are proposed to uncover and document the tangible and intangible aspects of Ivatan culture that may be at risk of fading. This study underscores the importance of understanding and supporting the cultural preservation efforts of migrant Ivatan communities through comprehensive sociological inquiry and targeted preservation initiatives.

Keywords: *Acculturation, Migration, Ethnic Identity, Language, Culture Preservation*

INTRODUCTION

Resettlement areas in the Philippines are attributed to the government's economic policy of distribution of lands, particularly in rural areas and vast fertile areas in Mindanao, for its utilization as agricultural areas and the eventual productivity and economic growth of such localities. Several farm projects located in Mindanao were offered to peasant farmers in Luzon during the Magsaysay administration (Horakova, 1971). In 1955, the Philippine Government declared that certain parts of Mindanao would be a" Promised Land "to any interested farmers willing to settle and cultivate the area. This motivated farmers from different parts of the archipelago to resettle in

Mindanao since they will be given their lands to farm. Bukidnon was then one of the declared provinces. This program was undertaken by the LASEDECO or Land Settlement Development Corporation. The Ivatans are one of the settlers along with the other groups from Luzon, Visayas, and nearby provinces in Misamis Oriental (Santiago, 1979). This series of migrations contributed to making some communities a multicultural society. The intricate and multifaceted impact of migrations on creating a multicultural society can be observed through various lenses. One of the most evident impacts is the demographic shift brought about by migration, leading to a rich diversity of ethnicities, languages, and cultural traditions within a society. This blending of different backgrounds enriches the social fabric and presents opportunities for individuals to learn from and embrace a wide array of cultural experiences.

In Ivatan culture, the role of women was to help perpetuate the economic status of the entire family or society (Buendia, n.d.). Division of labor based on gender is uncommon, whereby men and women have to share in all family activities at home or on a farm. In contrast, Ivatans in Malinao are aware of the present cultural changes that they are experiencing. The traditions, values systems, practices, and even their language are losing popularity among the young Ivatans.

These changes are inevitable in any society where different groups and cultures are intertwined. This process of change in culture is commonly referred to as *acculturation. Acculturation* refers to the exchange of cultural features that results when groups come into continuous first hand contact; the cultural patterns of both groups have changed, but the groups remain distinct (Berry, 2006). This study aims to better understand how migration affects the acculturation process of f women as they fulfill their roles as custodians of distinct cultural practices.

Research Questions

This study would like to assess the level of acculturation among Ivatan women and present their experiences as custodians of culture. Specifically, it sought to answer the following questions:

1. What are the demographic characteristics of Ivatan women?

2. What is the level of acculturation of Ivatan women according to:
    a. Language spoken; and
    b. Ethnic Identity?

METHODOLOGY

Research Locale

This study was conducted in Malinao, an urban barangay of the Municipality of Kalilangan in Bukidnon. Kalilangan is one of the 20 municipalities in Bukidnon situated in the Southern part of the Province. It is a 2nd class municipality covering a total land area of 28,414. 10 hectares. The town is bounded on the North by the municipality of Talakag, on the South by the Province of Lanao del Sur, on the East by the Municipality of Pangantucan, and on the Southwest by the Province of Lanao del Sur. It is further politically subdivided into 14 barangays, 4 of which are urban and 10 are rural barangays. Malinao is an urbanizing barangay in the Northwestern portion of the municipality of Kalilangan. It covers the biggest land area, which comprises 30.02% of the municipality. It is bounded by SVF Forchacu II in the North, Kili-Kili in the South, Barangay Canituan in the East, and Bumbaran in the West. It was created in 1958 through the NARRA settlement program. It has a total land area of 8,532.14 hectares with 349 titled farm lots. It is composed of 12 Puroks. The barangay is known for its hilly and rolling slopes with mountainous roads approaching the Poblacion.

Respondents

The subject–respondents of this study are the 50 first-generation Ivatan women migrants. Specifically, the respondents are the Ivatan women who were born in Batanes. The respondents are representatives from two communities with large numbers of Ivatan residents. The respondents of the study were obtained from the updated list from the Barangay Captain. Since the respondents are limited to the first-generation migrants, they were identified using snowball sampling. The 50 identified respondents included 41 women from the Poblacion of Malinao and nine from Imbariz, a barrio of Barangay Malinao.

The Instruments

The study used an adopted acculturation scale to measure ethnic identity. It also used the interview to measure the extent of acculturation. The first part of the instrument consists of questions from 1 to 8 to gather data on the socio-demographic characteristics of the Ivatan women. Part 2 comprises questions adopted from Santiago's study (1979) to draw demographic information upon their arrival in Malinao. It also includes questions on the reasons why they decided to come and settle in Malinao, Kalilangan. Part 3 measured the extent of acculturation on language using the adopted and modified acculturation scale of the HCHS/SOL Sociocultural Questionnaire. Section B includes

The Multigroup Ethnic Identity Measure, adopted from Phinney (1992), which was used to measure the extent of acculturation on ethnic identity. The extent of acculturation will be determined using 5 point scale, ranging from strongly disagree(1), agree (2), neutral (3), disagree (4) to strongly agree (5) responses.

Scoring Procedure

Responses to the questions in parts I, II, and III were used to determine the Ivatan women's role as custodians of culture. It will be further utilized to correlate with the extent of acculturation of Ivatan women in language and MEIM scale. On the MEIM (Multigroup Ethnic Identity Measure), the researcher adopted the scoring procedure presented by Phinney(1992). Ethnic identity is obtained when the total score is derived by reversing negative items (indicated by "R), summing across items, and obtaining the mean (Items 1, 2, 3, 5, 6, 8R, 10R, 11, 12,13,14,16, 18, and 20). The result will reveal affirmation and belongingness. It will also measure the individual ethnic identity in relation to their acculturation.

To measure the level of acculturation, the following adopted and modified instruments are utilized to measure language spoken and ethnic identity. A separate measurement was used to assess the cultural knowledge of the respondents.

The following rating range and qualitative description were utilized to measure the level of acculturation. The measurement of acculturation level is based on language spoken and Ethnic Identity.

Weight Points	Mean Values	Description
5	4.21 -5.00	Very High Acculturation
4	3.41 – 4.20	High Acculturation
3	2.61 – 3.40	Moderate Acculturation
2	1.81 – 2.60	Low Acculturation
1	1.00 – 1.80	Very Low Acculturation

From the measurement, a very high acculturation indicates adopting the host society's language. Meanwhile, very low acculturation indicates the retention of the respondents' language (Ivatan) as it is frequently used in daily activities. As reflected in the study of Phinney (1992), in assessing ethnic identity, a description of very high acculturation indicates a weak ethnic identity, while a very low acculturation indicates a

strong ethnic identity.

Treatment of Data

The data was analyzed using the SPSS (v.19) or Statistical Packages for Social Sciences. The acculturation level for language spoken and ethnic identity was determined using the mean and standard deviation. Meanwhile, the socio-demographic characteristics of the respondents were presented using frequency distribution and percentage.

RESULTS

Demographic Characteristics of the Repondents

Table 1 displays the frequency distribution of the respondents' history of migration.

Table 1 Frequency distribution of the respondents history of settlement

Years of Settlement	Frequency	Percentage(%)
1951 – 1955	1	2%
1956 – 1960	31	62%*
1961 – 1965	10	20%
1966 – 1970	1	2%
1971 – 1975	5	10%
1976 – 1980	2	4%
Civil Status		
Child	14	28%
Single	13	26%
Married	21	42%*
Widow	2	4%
Number of Children		
0 – 3	19	38%
4 – 7	5	10%
8 – 10	1	2%
N/A (child)	25	50%*
Occupation		
Farmer	28	56%*
Others	14	28%
Housemaid	6	12%
Homemaker	2	4%
Monthly Income		
500 and Below	4	8%
500 – 1,000	7	14%
1,001 – 1,500	4	8%
Undetermined	35	70%*
Information about the settlement		
From parents & relatives	37	74%*

From neighbors	9	18%
From community leaders	4	8%
Decision to settle		
Discussed with family members	28	56%*
Advice from parents & relatives	13	26%
Others	6	12%
By yourself	3	6%
Reasons for settlement		
To own a land	25	50%*
Others	10	20%
To have adventure	7	14%
Conditions in the place of origin was difficult	4	8%
To go with relatives who decide to settle	2	4%
To go with parents	2	4%
Total	50	100%

The Ivatan Women's level of acculturation according to language used

Table 2 displays the acculturation level of the respondents based on the language spoken.

Table 2 The level of acculturation based on language spoken

Statement		Frequency	$\bar{x}$	Qualitative Description
In general, what language(s) are the movies, T.V. and radio programs you prefer to watch and listen to?	Only Ivatan	0	4.46	Very High Acculturation
	Ivatan better than Cebuano /Tagalog	4		
	Both equally	2		
	Cebuano /Tagalog better than Ivatan	11		
	Only Cebuano /Tagalog	33*		
If you could choose your children's friends you would want them to be…	Only Ivatan	6	2.68	Moderate Acculturation
	Ivatan better than Cebuano/Tagalog	4		
	Both Equally	40*		
	Cebuano /Tagalog better than Ivatan	0		
	Only Cebuano /Tagalog	0		
What language(s) do you usually speak with your friends?	Only Ivatan	3	2.54	Low Acculturation
	Ivatan better than Cebuano /Tagalog	22*		
	Both equally	21		
	Cebuano /Tagalog better than Ivatan	3		
	Only Cebuano /Tagalog	1		
In what languages do you read and speak?	Only Ivatan	4	2.52	Low Acculturation
	Ivatan better than Cebuano/Tagalog	24*		
	Both Equally	14		
	Cebuano/Tagalog better than Ivatan	8		
	Only Cebuano /Tagalog	0		
The persons you visit or who visit you are…	Only Ivatan	9	2.46	Low Acculturation
	Ivatan better than Cebuano/Tagalog	21*		
	Both Equally	20		
	Cebuano/Tagalog better than Ivatan	0		
	Only Cebuano /Tagalog	0		
Your close friends are…	Only Ivatan	2	2.36	Low Acculturation
	Ivatan better than Cebuano/Tagalog	28*		
	Both Equally	20		

	Cebuano/Tagalog better than Ivatan	0		
	Only Cebuano /Tagalog	0		
You prefer going to social gatherings/parties at which people are…	Only Ivatan	9	2.22	Low Acculturation
	Ivatan better than Cebuano/Tagalog	21*		
	About half and half	20		
	Both Equally	0		
	Only Cebuano /Tagalog	0		
What language(s) do you usually speak at home?	Only Ivatan	13	2.14	Low Acculturation
	Ivatan better than Cebuano/Tagalog	24*		
	Both Equally	7		
	Cebuano/Tagalog better than Ivatan	5		
	Only Cebuano/Tagalog	1		
In which language(s) do you usually think?	Only Ivatan	45*	1.22	Very Low Acculturation
	Ivatan better than Cebuano /Tagalog	2		
	Both equally	1		
	Cebuano /Tagalog better than Ivatan	1		
	Only Cebuano /Tagalog	1		
What was the language(s) you used as a child?	Only Ivatan	46*	1.12	Very Low Acculturation
	Ivatan better than Cebuano/Tagalog	3		
	Both Equally	0		
	Cebuano/Tagalog better than Ivatan	1		
	Only Cebuano/Tagalog	0		
	Over all	50	1.85	Low Acculturation

N= 50 * rank first

The Ivatan Women's level of acculturation according to Ethnic identity

Another measure of acculturation used in this study is the Multigroup Ethnic Identity Measure. The summary of responses is presented in Table 3.

Table 3. Summary of Responses on the Multigroup Ethnic Identity Measure

Statements	$\bar{X}$	S.D.	Qualitative Description
I am happy that I am a member of the group I belong to	4.92	.27	Very Low Acculturation
I have a strong sense of belonging to my own ethnic group.	4.80	.45	Very Low Acculturation
1 feel good about my cultural or ethnic background.	4.78	.50	Very Low Acculturation
I have a lot of pride in my ethnic group and its accomplishments.	4.64	.52	Very Low Acculturation
I am active in organizations or social groups that include mostly members of my own ethnic group.	4.58	.70	Very Low Acculturation
I feel a strong attachment towards my own ethnic group.	4.56	.54	Very Low Acculturation
I participate in cultural practices of my own group, such as special food, music, or customs.	4.30	.67	Very Low Acculturation
I understand pretty well what my ethnic group membership means to me, in terms ofhow to relate to my own group and other groups.	4.18	.62	Low Acculturation
I have spent time trying to find out more about my own ethnic group, such as its history, traditions, and customs.	4.08	.56	Low Acculturation
I have a clear sense of my ethnic background and what it means for me.	4.0	.80	Low Acculturation
I think a lot about how my life will be affected by my ethnic	3.92	.80	

group membership.			Low Acculturation
I am involved in activities with people from other ethnic groups.	3.88	.71	Low Acculturation
In order to learn more about my ethnic background, I have often talked to other people about my ethnic group.	3.80	.94	Low Acculturation
I don't try to become friends with people from other ethnic groups.	3.68	.68	Low Acculturation
I sometimes feel it would be better if different ethnic groups didn't try to mix together.	3.46	.90	Low Acculturation
I like meeting and getting to know people from ethnic groups other than my own.	3.42	.97	Low Acculturation
I enjoy being around people from ethnic groups other than my own.	3.28	1.0	Moderate Acculturation
I often spend time with people from ethnic groups other than my own.	3.02	1.0	Moderate Acculturation
I really have not spent much time trying to learn more about the culture and history of my ethnic group.	2.72	1.0	Moderate Acculturation
I am not very clear about the role of my ethnicity in my life.	2.52	1.23	Low Acculturation
Overall	3.92	.74	Low Acculturation

Legend:
4.21 – 5.00 Very Low Acculturation
3.41 – 4.20 Low Acculturation
2.61 – 3.40 Moderate Acculturation
1.81 – 2.60 High acculturation
1.00 – 1.80 – Very High acculturation

DISCUSSION

Demographic Characteristics of the Respondents

Years of settlement. Ivatan migration was said to be a family group migration. After the first batch of respondents arrived in Malinao from 1961 to 1965, followed by 1971-1975 and 1976–1980. In the case of a respondent who came as early as 1951- 1955, this is the case of the remaining original Ivatan settlers.

Civil Status. The civil status of respondents upon their arrival in Malinao is summarized as follows: the majority of the respondents were married, and some were single. Interestingly, a significant number of respondents were still a child when they arrived in Malinao to join their parents and relatives. Arriving very young in Malinao had some implications for the acculturation of the Ivatans. Two of the respondents were widowed when they arrived in Malinao. Single and unmarried parents were considered eligible settlers as long as they had dependents. This may be because the government may have relied on Ivatan's *bayanihan* system. As discussed earlier, the absence or death of a husband or a man in the family may not be a significant concern for the widowed wife and her children. In an Ivatan community, everybody is there to help without anyone asking. The Ivatan men were willing to help a widowed Ivatan tend her farm and

help the orphaned children. The availability of men to help is, of course, contributed by women who can tend their farms as efficiently as men. Nobody will run out of well-meaning helping hands in the Ivatan farms.

Number of children. The majority of the respondents have children ranging from 0 – 3, followed by those who had 4-7 children when they arrived in the settlement. According to Escalona's letters, their parents brought these children aboard LST (Landing Ship Troop) from Batanes to their settlement area. Two pregnant women were also with the group. Based on the documents, to be qualified as settlers, there had to be a family head for every family, regardless of whether it was a man or a woman. Interestingly, some respondents arrived in Malinao as children. This partly explains the "low level of acculturation "among the Ivatan since Malinao is isolated from the rest of the Kalilangan area. In one interview, a respondent recalled that it was in Malinao where she had learned the Ivatan language.

Occupation. The occupation of the respondents when they were still in Batanes was mainly farming. This is relatively true because in Batanes, farming is the Ivatan's primary livelihood (Dayo, 2011). Indeed, they have been considered as settlers because they are farmers. Also, a good number of respondents worked as house help in Batanes. Some respondents had been in Manila or had been house help for foreigners in Batanes. This implies that aside from farming, some respondents consider house help to be one of the options to support their daily needs. This is because life is hard in Batanes, the respondents would always exclaim. A small piece of land is not enough to support a family's daily needs. Some stayed at home while the others were young enough to work. Although they might be very young to work for an earning, they had numerous tasks like *magpastol (*grazing the herds), *mag inadlaw* (being paid daily for labor on the farm), accompanying their parents in the farm, and running errands whenever needed. This also contributes to the Ivatan's upbringing, commonly called *"raised on the farm."* It is a practice that contributed to the making of an Ivatan woman farmer since farming is a task for everybody and everyone in the family. This was also observed in the study of Baretto (2012) among the Bukidnons; the enculturation of children is through the effort of the parents who brought them to the farm to observe what their parents and other adults are doing. The respondents supported this when they said," yan man ang Nakita naming sa aming mga magulang" (that was what we observed from our parents), referring to the practice of going to the farm.

Monthly Income. The Ivatans are hesitant to disclose how much they earn, and the researcher could not determine how much they earned when they were still in Batanes. According to the key informant, the Ivatans would hesitate if asked about their income; most of them find it uncomfortable to talk about their income. Also, some respondents had incomes that ranged from P500 to P1,000. This includes those who work as house helpers, nannies, or selling the garden's produce.

Information about the settlement. Table 1 shows that most respondents knew about the settlement from their parents and relatives. This might be because a considerable number of the respondents were still very young during the settlement. As

claimed by the respondents who *had known the settlement from a community leader*, the arrival of Ivatans in Bukidnon was through the effort of Marcos Escalona, a community leader in Batanes (Santiago,1979). Aside from that, having a family or being with a family was a requirement to be qualified as a settlers. Ivatans are known to be closely knit (Batanes: Born of Fire and Water, 2011).

Decision to Settle. The decision to become settlers was mainly attributed to a *discussion with family members*. In comparison, *advice from parents and relatives comes* second. Only a few *decided for themselves*, while others decided to settle because they were still young and could not decide; some *had come with their relative*s. Their responses are supported by literature and observation in the community, that the Ivatans are family oriented. They work and live as a family. Their bayanihan system might have emerged from their close family ties. One respondent said," *huwag ipagwalang bahala ang mga kamag-anak*" (Do not turn your back on relatives), a confirmation of deep concern with members of the Ivatan community. This supported the study of Johnson (1996) on reasons why people migrate, in the case of the Ivatans, Johnson classified it as social migration, whereby social migration entails moving to a better quality of life or to move closer with family and friends.

Reasons for settlement. From the respondents, most of them *had come to settle in Malinao to own a land*, a natural resource that is so scarce in Batanes. In the letter of Marcos Escalona to President Magsaysay, he pleaded the cause of Ivatan peasants, as their hard life in Batanes is no better than the heavily tenanted areas in Central Luzon, that rice is considered as golden cereal and can be served only during special occasions. This portrays the hard life in Batanes that prompted them to leave Batanes and look for a greener pasture. As observed, the migration of Ivatans in Luzon or any parts of the country had been widespread. This could be attributed to a hard life on a frequently stormed island. Some respondents recalled how terrible it was during the storm. The storm often wipes out the root crops and other produce.

Thus, the history of Ivatan migration was significantly contributed by pull factors. As claimed by social science scholars, for most migrants, "pull factors" are stronger than "push factors". This implies that the hope of a better life in a new place will outweigh the worry of what they had to leave behind (Weichold, 2010; Berry, 2006; Deshingkar, et al., 2004; Richerson as cited by Ward, 1992). Also, in the study of Johnson (1996) Ivatans' migration is also referred to as economic migration, where migration may involve finding work or looking for a greener pasture. Baretto (2012) also mentioned that that was the common reason migrants from Luzon, Visayas, and some parts of Misamis came to Bukidnon. The history of Ivatan migration may create a clear picture of what encouraged them to come and settle and their demographic characteristics. This has something to do with the respondents after years of settlement.

Language is considered one of the most essential components of ethnic identity (Kang, 2006) and has been commonly and widely assessed across acculturation instruments (Phinney, 1992). The Ivatans' language is of Austronesian origin; it has some Spanish influence and some tone of Chinese origin (Batanes Born of Fire, 2000). It was

known as Chirin nu Ibatan, otherwise known as Ivatan. The table further displays their level of acculturation in terms of language spoken.

The Ivatan Women's level of acculturation according to language used

To specifically examine the Ivatan women's acculturation level in terms of language spoken, the following were discussed. The respondents' overall acculturation level was *low acculturation*. This would mean that in terms of language, a low acculturation means that the Ivatan language was still widely used among the first generation migrants. In another manner, this would also entail that their language shows signs of declining. This could be influenced by the languages in movies, TV, and radio programs they prefer to watch and listen to, as well as languages that are not Ivatan.

Besides, Ivatan movies, T.V. and radio programs are unavailable in Malinao. This does not mean they would prefer watching non-Ivatan movies, but it is because they do not have much choice in what to watch. Consequently, on the statement "*If you could choose your children's friends you would want them to be with",* they had *moderate acculturation.* This implies that some respondents want their children to socialize more with Ivatan friends. Having an Ivatan friend might be an advantage for the enculturation of the young Ivatan. The idea that their children had friends who are also Ivatans has given them peace of mind. The researcher's observation in Malinao affirms this. During fieldwork, It was observed that the almost empty streets in Malinao show that the young Ivatans are not usually seen loitering in the streets. The people, including the young Ivatans, go to school or the farm. If not, they are at home; they never stay in the streets. This could be attributed to the Ivatan women bringing their children to the farm.

For many years in Kalilangan, the researcher never heard of a delinquent Ivatan. Although, in some situations, some respondents would allow their children to have friends who are non-Ivatans, provided that they are good friends. In one interview, a respondent said "*Kahit na sino ang gusto nilang kaibigan, ok lang.*" (Whatever friends they had, its ok), This can also be observed from some respondents that whoever their children would like to be with would be up to them, which is a form of leniency to children's wishes. This kind of leniency could lead to a series of intermarriages of young generation Ivatans to non-Ivatans. They may prefer having an Ivatan-in-law, but it is still the children's decision that prevails.

Interestingly, the level of acculturation where most of the respondents got *low acculturation* are as follows: a) languages they usually speak with friends; b) the persons they visit and their visitors c)their close friends; d) attended to parties and social gatherings with Ivatans; e) languages they read and speak; and languages they usually speak at home. In the study of Santiago (1979), among the Ivatans in Malinao, she noticed that inside or outside the house, the dialect used was Ivatan and Pilipino was resorted when non-Ivatan are present. Cebuano was used with the guest who belonged to Visayan group. She also observed that during the early settlement, it is not uncommon for Ivatans to use their dialect even in non-Ivatans' presence. The researcher observed that Ivatan dialect is common only among the elders. When the young Ivatans were asked

how fluent they are with the language, their reply was, *"hindi po masyado marunong, yun lang kadalasang ginagamit na salita",* (I knew only a few Ivatan words, usually those that are commonly used in daily conversation).

In the same way, the respondents had *low acculturation* on the person they visited, their close friends, and attendance at Ivatan parties and social gatherings. These imply that they still maintained close relationships with their Ivatan friends and relatives. As observed, Ivatan homes are nearby. In terms of having close friends, the respondents scored low on a acculturation scale.This indicates that most of their close friends are Ivatan's.

In terms of socialization, the questionnaire shows that attendees are Ivatans. In terms of socialization, the questionnaire shows that the Ivatans are not highly acculturated. The Ivatans still prefer to visit Ivatan friends and relatives. Interestingly, in choosing their children's friends they had *moderate acculturation*. According to the respondents it does not matter if their children will have an Ivatan or an *Ipula* friend. Whatever preferences their children have for their friends, they would gladly accept it. Also, they had *low acculturation* on *languages they speak with friends; languages they read and speak;* and *languages they speak at home*. This supports their responses that they surround themselves more with Ivatan friends and acquaintances

A *low acculturation* on the languages spoken at home entails that Ivatan language was still widely spoken by the respondents in their homes. The results also entail that, although not extensively, the Ivatan language is commonly used in and outside of their homes with their Ivatan family members and friends. During the researcher's visit to the respondents, she observed that the house was always filled with grandchildren. If the elders talk with adult members children, as well as with the other elders, they use the Ivatan language. However, when they talk with their grandchildren, they usually use Tagalog or Cebuano.

Most of the respondents claimed that their grandchildren could not understand Ivatan, so they had to use Tagalog. One respondent claimed that, *"Ang mga apo ko hindi na makaintindi ng Ivatan*" (My grandchildren do not understand Ivatan). This could be because the language used in school is Cebuano, and most of the people in the community are composed of Cebuano, Ilonggo, Ilocano, and Maranao. The lingua franca used in the community is Cebuano.

Meanwhile, they had a *very low acculturation* in terms of how frequently they used the Ivatan language when *they think* and the *language they used as a child*. As first-generation migrants, their language orientation is similar to that of Batanes origin. However this does not mean that all of the respondents exclusively used Ivatan during their childhood because some had been using Tagalog or English. This is because Manila is one of the most common places an Ivatan would visit when they travel out of Batanes. This shows that the respondents had a deep appreciation of their culture. Thus, language is an important factor in preserving one's culture and an individual's sense of ethnicity.

The Ivatan Women's level of acculturation according to Ethnic identity

Another measure of acculturation used in this study is the Multigroup Ethnic Identity Measure. The summary of responses is presented in Table 11. The data reveals that the respondents had *low acculturation* on ethnic identity. This means the respondents have a strong sense of affirmation and belongingness to their ethnic group.

From the data, the respondents had *very low acculturation* on being happy that they are members of the Ivatan group. They have a strong sense of belongingness to their ethnic group. They feel good about their cultural and ethnic background. They take pride in the ethnic group and their accomplishments and are active on organizations that mainly include their own ethnic group. They have a strong attachment to ethnic groups and participate in the group's cultural practices. Thus, it can be inferred that the respondents had strong affirmation and belongingness to their ethnic group. These are reflected in their responses *"Na Ivatan ako*" (I am a true Ivatan).

A *low acculturation* in ethnic identity had some connection to their identity and how they tend to identify themselves from a group. According to Phinney (1992), a strong ethnic identity while also identifying with the new society is considered an integrated or bicultural identity. Along the same line is the outcome of acculturation. Berry (2005) mentioned that "integration takes place when certain aspects of original culture (i.e. language) is retained and at the same time fully adopting the host culture." In this sense, the Ivatan women are not bicultural since they have a strong ethnic identity and have not fully adopted the host's culture. The respondents would emphasize that they cannot be identified with the non-Ivatan ethnic group, but they can relate to them. The Batanes Born of Fire (2011) mentioned that "among the Ivatans in Batanes, they are clannish and cluster together in kin groups." This closely knit nature of Ivatan community would explain that after 50 years of settlement, they still have a strong ethnic identity.

It can be seen that they rated *a low acculturation* in the role of ethnicity in their lives. This item shows that the respondents have an apparent concept of the role of ethnicity in their lives. Although, during the interview, they would be thinking deeply before answering the question, they find it intriguing how their ethnicity matters. They rated *moderate acculturation* as spending some time to learn more about the culture and history of their ethnic group. One respondent said, *"Busy sa bukid*" (I'm busy tending the farm), thus, they do not have time to know more about their culture. They have *moderate acculturation* and spend more time with other ethnic groups. This indicates that they usually spend some time with other groups. Ivatans are known to be a peace loving people. They would try to maintain good interpersonal relationships. For some respondents, it is important to be with other ethnic groups as long as it is for the good of both groups. As observed, the respondents are not strict about being with other ethnic groups. In summary, the acculturation level of the Ivatans, based on their language and ethnic identity, is *low*. The standard deviation indicated that their ratings were homogeneous, meaning they did not disperse much from the mean.

Conclusions

The first generation Ivatan women have settled in Malinao, Kalilangan, Bukidnon for over 30 years. The majority of the women consider themselves farmers. Having retained their demographic characteristics, it is concluded that a person with a very strong sense of ethnic identity, would not be easily influenced by the culture of other groups.

The Ivatan women still frequently use the Ivatan language in their daily activities. They possess a strong sense of affirmation and belongingness to their ethnic group. They have low acculturation levels in terms of language and ethnic identity. Having retained only some of their enduring practices and Ivatan language, it is concluded that the preservation and transmission of culture are affected by interpersonal and intrapersonal interactions and advanced technology.

Recommendations

A sociological approach in the study of women is found to be compelling in the study of migrant Ivatan women. The impact of their acculturation may have influenced their role as custodians of culture and, thus, may fall short of the group's expectations. On this note, the researcher would recommend further research on the group, especially on their language and intangible and tangible culture, which are waiting to be discovered. A more in depth and thorough assessment and collection of their intangible culture is also recommended. They may have forgotten some but given enough time it can be revealed.

Compliance with Ethical Standards

The author hereby declares that in conducting this study, utmost care was taken to ensure compliance with ethical standards. All participants provided informed consent prior to their involvement in the research. They were informed of their right to withdraw from the study without consequence. The anonymity of the respondents was strictly maintained, with no identifying information disclosed in any reports or publications resulting from this study.

The well-being of the respondents was a priority throughout the research process. During data collection and analysis, measures were implemented to safeguard their physical, emotional, and psychological welfare. No conflicts of interest were present or impacted the conduct of this study. Plagiarism was strictly avoided, and proper citations and references were employed to acknowledge the work of others. There was no bias in the interpretation of the findings; data was analyzed objectively and reported accurately.

The results of this study are intended solely for research purposes, with no intention of misrepresentation or misuse.

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GAMIFICATION IN ENGLISH ONLINE LEARNING: A PHENOMENOLOGICAL STUDY

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ABSTRACT

This study aimed to document the English Online Learning Experiences using Gamification among college students in one of the colleges in the province of Surigao del Sur, Philippines. Specifically, the study sought to find out the following: (1) experiences of instructors and students in using gamification during online learning; (2) instructors and students' view on gamification; and (3) ways on how gamification in online learning be improved. This involved eight (8) college students and four (4) English Instructors, who underwent an inclusion criterion, participated in the in-depth interview and focus group discussion. A phenomenology research design was used in this study as this sought to get the lived experiences of both participants. To gather the data, researcher-made interview guide questions validated by experts were used to gather data. Results of the study revealed that both instructors and students find gamification an aid to their learning; however, difficulties in integrating it emerged due to many reasons identified - one of which is internet connection as a major factor. Thus, the study recommends that in blended learning, course instructors are encouraged to review and revisit their course syllabus, adding the integration of gamification in their online classes; the Dean for Academics to guide and support the crafting of a general online learning plan; institution's extension services may include wireless internet connection points in adopted barangays to be utilized by the student-residents there; and NEMSU-Lianga alumni are encouraged to form social groups or programs in raising funds for the less-privileged students who have zero access to technology.

Keywords: *Gamification, Distant Learning, English Online Learning, Phenomenology, Higher education*

INTRODUCTION

Health emergencies such as the pandemic has had a significant impact on the education sector and provided a much-needed impetus for digitization. It has transformed the education system drastically and has brought a paradigm shift in teaching and learning methodologies forcing educational institutions across the globe to re-imagine traditional classroom learning and transition to an online mode of teaching to provide uninterrupted access to education and knowledge (Bhati, 2016).

As such, technologies are the visible face of the immediate changes taking place in the new normal (Koopman, 2019). Moving from face-to-face presence to virtual contact (synchronous and asynchronous), the learning space becomes disembodied, virtual not actual, impacting both student learning and the organization of schools, which are no longer buildings but websites (Pacheco, 2020). With this, both instructors and students have to keep pace with the new trends of delivering instruction by making everything possible online.

With the online modality, motivation and engagement are an ongoing challenge for classroom instructors and the basis of various research endeavors (Glynn et al., 2015). A substantial body of literature indicates that the use of non-traditional interventions, such as games, simulations, multimedia instruction and interactive activities are valuable teaching methods. Hence, the rapid increase in the availability and affordability of interactive technologies has contributed to the adoption of games in higher education teaching to foster collaborative learning, exploration and discovery (George, 2018). In Malaysia, for example, where the teaching and learning of English have changed from conventional chalk-and-talk methods to modern methods that involve various platforms such as *Quizizz and Kahoot!*, which is free and easy to use.

With the adoption of games, it has been seen that students are eager to experiment with different technologies to support their learning, largely because they are skilled in the use of mobile technology and enjoy using applications and games designed for such devices (Prensky, 2011). In the Philippines, Carbonilla-Gorra et al (2016) concluded in his study that most students in state colleges and universities in Caraga region are likely to use technology in the classroom for the purpose of positive consequences supporting the view that use of technology helps in enhancing learning related activities in the classroom. Moreover, according to Barrio, et al (2016), educational games and game-based response systems (GSRS) or the gamification techniques integrated into student response systems, both increase student motivation and engagement (Graham, 2015).

Northeastern Mindanao State University (NEMSU)-Lianga, has its fair share of challenges when it comes to students' motivation and engagement in remote teaching and learning. As it has been viewed as one of the challenges in the paradigm shift to the

virtual world, instructors of the institution tried to venture on the applications available in the internet to augment the dilemma, one of which is by the integration of lessons through gamification, which are the interactive student engagement platforms which offer multiple features in making one's classroom fun (Shamil, 2021). The positive feedback gamification is gaining from instructors, such as *quizziz, kahoot!* and the like, who have come to integrate it already in their respective classes prompted the researchers to conduct the study. Determining students' lived experiences on these forms of educational games in this time of online teaching will give the institution a research-based basis on embracing digital games as part of the continuity learning plan, to answer the growing problem of students' engagement in remote teaching and learning; thus, this study.

Here are some of the concepts gathered by the researchers that can be associated with gamification, challenges in using it, and its positive and negative impacts in integrating into online classes.

Gamification. Students in the 21st century have a different need than those who came before them. Due to the advancement in technology, combined with the high expectations of academic success, much of their time is spent fulfilling requirements rather than learning (Dichev et al., 2015). The problem of how to motivate students to enjoy learning, in an environment filled with distractions from a variety of technology driven devices is what educators wrestle with every day. Motivation is one aspect of gamification which is often discussed, but there are questions about empirical evidence related to increasing motivation (Dichev & Dicheva, 2017).

Gamification is the creation of game-like feelings, in non-game situations (Wiggins, 2016). The objective of gamification can also be defined as the harnessing of game mechanics to inspire similar senses and engagement to that of games (Chia & Hung, 2017). As a society, the use of games for entertainment has become commonplace. The availability of gaming consoles, tablets, cell phones, and computers for playing games have become ubiquitous (Faiella & Ricciardi, 2015). Often, the first thought regarding gamification leads to technology; however, gamification is a method of engaging people in activities as directed (Dichev & Dicheva, 2017). The technology of gamification is a tool to facilitate the game environment (Faiella & Ricciardi, 2015). In other words, gamification is a social construct, which motivates those included to participate in a specific way (Dichev & Dicheva, 2017). Gamification is a method of encouraging the enjoyment of accomplishment. Nick Pelling may have coined the term in 2002, (World, 2015), but the term did not truly trend until 2011 (Dichev & Dicheva, 2017) . Since then, education has embraced gamification as a method of motivating students to study and learn (Dichev & Dicheva, 2017).

Challenges in Using. Given the knowledge base stemming from research concerning motives for participation and gamification, gamification illustrates a promising tool to evoke positive effects among teachers and students around the world and to create a more enjoyable experience for users. The application of gamification is however not easily accomplished and definitely not without obstacles and challenges. Previous endeavors and scientific research have mainly neglected this side and solely proclaimed

its potential benefits and values instead. Yet, gamification can unfold its potential only under such circumstances where obstacles and challenges are addressed adequately.

There are two major sources from which obstacles and challenges can arise. The first challenge concerns the misuse of gamification by developers and decision makers. Gamification is not a standalone solution but describes the application of game design elements in a specific artifact. Developers and decision makers have to be aware that this artifact has to be constructed in such a manner that the use of game design elements contributes to the creation of an enjoyable experience (Füller, 2006; Scheiner, 2015). Hence, given functionalities of the artifact have to be interwoven with the chosen game design elements. Game design elements are otherwise not perceived as an integral part but as disturbing or distracting elements. Game design elements also have to be aligned with the overall objective of gamification to guide the activities of participants toward that objective (Scheiner & Witt, 2013).

The second challenge is closely linked to the previous challenge. If rewards become too important, participants could start to game the system. In cases where self-marketing is a main trigger for participation, participants could especially try to gain an unfair advantage by manipulating the system. A common approach to play a VIC illustrates the formation of cartels. Participants build groups and show a concerted behavior in order to promote their goals and ideas. This is expressed for instance by awarding each other points, by writing positive comments to each other, or by trying to negatively influence the public evaluation of competing ideas. A longitudinal study by Scheiner (2014) indicated for instance that participants in an online idea competition were generally aware of this issue and pointed to its possible and inherent negative consequences for participation. The remaining question is, however, at what point manipulation starts to harm the motivation of participation and when it starts to inhibit the intended objectives of VICs.

Perceived Usefulness. To answer the growing problem especially in students' engagement, made by adjustments to remote learning, research on technology integration and utilization in the English language teaching (ELT) classroom to enhance the teaching of English as second language (ESL) or a foreign language (EFL) has been popular in recent years because of its pedagogical contributions. Teachers, policy makers, and education scholars believe that technology integration supports both the teachers' pedagogical practices and the students' learning improvement (Costley, 2014; Parvin & Salam, 2015). This technology integration has been narrowed down by Gilakjani (2017), in his study, to educational games (EG) which are found to be as an effective learning tool as stated in various literatures. Garris et al (2015) have found that EGs are able to help students on various learning domains such as cognitive, affective as well as psychomotor skills. Among the EG findings that is widely discussed, is its ability to increase student motivation to learn. One of the most important factors in education is motivation to learn. Therefore, a highly motivating EG should be able to transform learning approaches like never before. A study of Garzotto (2019) also revealed that multiplayer online games provide learning benefits on affective level as well as knowledge domain. Other studies also acknowledged the benefits of using games for learning. According to

these studies, games motivate learning, offer immediate feedback, support skills, and influence changes in behavior and attitudes.

Cautions. Just because something is cool, fun, and popular does not mean it will lead to learning (Kapp, 2013). Be on the lookout for this "wrong" reason when making the decision to gamify something in the classroom. PBL (points, badges, leaderboards) are the most commonly implemented aspect of gamification, though often without justification (Dichev & Dicheva, 2017). Neither the fun factor, nor the popularity factor (e.g., other teachers are using gamification) should be the driving force behind using a gamified approach for an interactive learning activity.

Deciding to gamify a learning activity on the assumption that everyone loves a game is another "wrong" reason to use gamification (Kapp, 2013). Evaluating the audience that will be participating in the activity is an important step in the design process. Some students love games and competition, but others do not. Instructors should use an approach that will appeal to their specific group of students.

Using gamification with the idea that students will play the game and never know that they are learning is not a good justification for gamifying a learning activity. Research shows that students retain information longer when they know what they are learning (Kapp, 2013). Gamification should highlight the lessons learned. Pre-discussion and post-discussion about concepts learned in the gamified activity are important to consider.

RESEARCH QUESTIONS

This study aims to determine the experiences of instructors and students on the use of gamification in English online learning. Specifically, it seeks to answer the following questions:

1. What are the experiences of instructors and students in using gamification during online learning?
2. How do the instructors and students view gamification?
3. With the lived experiences, how can gamification in online learning be improved?

METHODOLOGY

This section presents the qualitative design and methodology, research site, selection criteria and participants, data collection, methods of validation and ethical considerations of the study.

A. Qualitative Design and Methodology

The purpose of this study was to explore the experiences of both instructors and college students in the use of gamification in their online learning. Since this explored the

lived experiences, phenomenological research was used, as it seeks to study a concept or phenomenon experienced by one or more individuals (Creswell, 2009).

Hegel described phenomenology as conscious knowledge associated with saying what is perceived, sensed, and known from the person's experience (Moustakas, 1994). Like Hegel's description of the phenomenology, Lourer (1967) implied that the unique source of absolute existence is based on what the person thinks, feels, and perceives. Moustakas explained the phenomenon as "what appears in the consciousness" (p. 26). Husserl was influenced by Descartes' belief that the "perception of the reality of an object is dependent on a subject" (as stated in Moustakas 1994, p. 27).

B. Research Site

The study was conducted in Northeastern Mindanao State University (NEMSU)-Lianga formerly known as Surigao del Sur State University-Lianga, located at the heart of the municipality of Lianga, Surigao del Sur. The institution achieved its status as a university through Republic Act 9998 signed on February 22, 2010. The history of the University dates back to 1982 when Bukidnon State College opened their extension in Tandag known as the Bukidnon External Studies Center. In 1992, it became the Surigaodel Sur Polytechnic College. The creation of the College integrated four DECS-supervised schools in the municipalities of Cagwait, Tagbina, Lianga, and Tago. Six years later in 1998, the College earned the status of being a state college by virtue of Republic Act 8628. In 2000, the Surigao del Sur Institute of Technology (SSIT) in Cantilan became the fifth satellite campus of the University.

As an institution, it offers nine (9) programs under four (4) colleges. For the College of Arts and Sciences (CAS), Bachelor of Science in Environmental Sciences (BSES) and Bachelor of Science in Marine Biology (BSMB); for the College of Teacher Education (CTE), Bachelor of Science in Elementary Education (BEED) and Bachelor of Science in Secondary Education (BSEd) major in Biological Science; for the College of Fisheries (CFT), Bachelor of Science in Fisheries (BSFi); for the College of Business and Information Technology (CBIT), Bachelor of Computer Science (BSCS), Bachelor of Business Administration (BSBA) majors in Financial Management (FM) and Business Economics (BE) and the Bachelor of Science in Hospitality Management (BSHM).

Even before the pandemic, the institution performed excellently both academically and non-academically. With the crisis, the institution continued to perform through a continuity learning plan and pursued providing quality education through a blended learning modality. With this, the institution, through its instructors, provides online classes to students and uses different modes of educational games to augment the challenge on students' engagement; thus, the research site of this study.

Figure 2 illustrates the map of Lianga, Surigao del Sur, particularly in NEMSU-Lianga where the study was conducted.



C. Selection Criteria and Participants

This study investigated the lived experiences of both instructors and college students in the use of gamification in online learning. This involved the college students of the institution across levels of NEMSU-Lianga and English instructors who are using various forms of gamification in online learning.

This study used purposive sampling design to determine the respondents. The study used the following criteria to be included as respondents, for the students: (1) he/she must be currently enrolled in the institution's blended learning modality; (2) he/she is enrolled for at least two (2) semesters. Meanwhile, for the instructors: (1) he/she must be able to integrate gamification for at least two (2) semesters; and (2) he/she should be an English instructor.

Since there were a lot of students that can be considered as participants, their names were drawn by lots for the identification of final participants. They were informed of their roles in the study, and those who did not like to be part of were considered; thus, there were four (4) English instructors and eight (8) students as participants of the study.

D. Data Collection

The following are used to collect data for the study. This presents the interview notes, and class observation recordings/notes.

Class observation recordings/notes. Class observations were conducted by the researchers to the online classes conducted by the participants. This observation guild to verify the experiences shared by both participants during the interview sessions. Whatever responses transpired during the sessions, the researchers would be able to confirm it through this observation.

Interview notes. Interview sessions were conducted to both participants of the study. Their responses to the corresponding questions stipulated in the validated

interview guide served as the main data of the study. Hence, they were asked as to their experiences – the challenges, the support taken and the like, their views on gamification and recommendations they could provide to improve the integration of gamification in the online classroom.

To analyze the collected data taken from the transcription of interview session/s, thematic coding will be used. Thematic coding is a process that involves sorting of data and assigning them to categories. The purpose of data coding is to summarize it meaningfully. The data coder ascertains that none of the important points of the data have been lost in data coding (Maguire & Delahunt, 2017).

E. Role of the Researcher

The term phenomenology is derived from the Greek 'phainein', which means 'to appear', and it was first used by Immanuel Kant in 1764. Kantian phenomenology is based on constructivist philosophy for the reason that the phenomena are constructed by a cognitive subject who is human being. In the constructionist view, the subject constructs what it knows, and in the phenomenological view, the subject knows what it constructs which is not appearance but it has appearance in the consciousness (Rockmore, 2011). The aims of phenomenological research are to reach the essence of the individuals' lived experience of the phenomenon while ascertaining and defining the phenomenon (Cilesiz, 2010).

With this, in this study, the researchers acted as observers and facilitators in the conduct of the study. They just then consolidated the participants' responses - as to the challenges, support, views and recommendations on the implementation of gamification. Thorough interpretation of the responses followed through thematic analysis.

F. Methods of Validation

The interview guide was validated by two (2) PhD instructors of the academe and one (1) teacher from the Department of Education (DepEd). Moreover, the class observations were conducted to further probe the responses given by both participants during the interview sessions.

RESULTS

In this section, the researchers present the results of the investigation. The primary purpose is to provide answers to the research problem presented in chapter 1. The presentation follows in this manner: (1) experiences of instructors and students in using gamification during online learning; (2) instructors and students' view on gamification; (3) improvement of gamification in online learning. Presented in table 1 are the emerging themes in every research statement:

Table 1. Emerging Themes from the Participants' Interview

Research Statements	Emerging Themes
1. Experiences of instructors and students in using gamification during online learning;	✚ difficulty in exploring the 21st century teaching and learning environment; ✚ seen the positive effects of using digital tools in instructional delivery; ✚ difficulty in accessing stable internet connectivity.
2. Instructors and students' views on gamification;	✚ creates and provides opportunity for participation; ✚ supplement learning in the online classroom; ✚ have seen that it still cannot replace traditional classroom set-up.
3. Improvement of gamification in online learning.	✚ regulation on the use of gamification in instruction; ✚ appropriate integration of gamification in instruction; ✚ choosing a user and information-friendly e-game; ✚ provide students aid for gadgets/technology

DISCUSSION

1. Experiences of Instructors and Students in using Gamification During Online Learning

This section presents the Instructors and Students' experiences in gamification during distance learning. The presentation follows these themes: (a) difficulty exploring the 21st century teaching and learning environment; (b) seen the positive effects of digital tools in instructional delivery; (c) and difficulty in accessing stable internet connectivity.

Difficulty in exploring the 21st century teaching learning environment

With the emerging challenges brought by distant education, teaching and learning has a 360-degree paradigm shift like the mode of distance learning from the traditional face to face into an online learning which requires information and communication technology advantage. Teachers and students use various sources like technology to gather information needed in their respective classes. They explore the digital tools available on the internet, use programs and software to synthesize information or simply find the information they want. In other words, the advantage of technology nowadays is clearly embedded in instruction.

However, the interview conducted to both instructors and students revealed that students have difficulty in using the digital tools. Instructor 1 claimed that it would be difficult for his students to do the switching of apps like from Zoom meeting to google chrome when there is a need to participate in Quizziz or Kahoot apps. This is also supported by other faculty member who said that some students are not aware and used to these digital tools and it will take a long time for her to instruct the students on what to do. Another teacher also stressed that students are not yet familiar with the apps they are integrating in their respective classes. Moreover, students also admitted that they are not yet familiar with some apps used by their teachers in class. These were the words of the teachers and students–

> "It would be difficult for my students to switch from Zoom for instance and then they are going to google chrome to participate in for example in kahoot, quizziz and other online platforms [Instructor 1, Appendix F, lines 18-20].
>
> "They are not aware how to, they are not used to or they are not familiar on how to, how to join or how to do it. It took a long time to instruct the students, to inform them what to do while instructing how to do the game. Then a question will arise: how to do that, how to do this [Instructor 2, Appendix F, lines 39-44].
>
> "Our instructors used apps that are new to us and so we need to deal with it. It's difficult sometimes to interact with the app but we'll get through this. Push lang [Student 3, Appendix G, line 8-9].
>
> "The problem is that difficult talaga siya to explore since aside from bago, we also have to adjust with the new norm or their way of teaching us virtually [Student 5, Appendix G, lines 16-17].

The findings can be attributed to the implementation of flexible learning through CHED Memorandum Order No. 04, series 2020 in which the need to explore other innovative learning modalities that will facilitate migration from traditional to flexible teaching and learning options is urgent.

Seen the positive effects of digital tools in instructional delivery

It is very evident that 21st-century learners today are using digital tools to augment their learning. Teachers eagerly want to make their students improve their school performance and through technology, it can help them achieve it. Additionally, technology

in the classroom should make teachers' jobs easier without adding extra time to their day. Technology gives students easy-to-access information, accelerated learning, and interactive activities to apply what they learn and enable them to explore and deepen their understanding of difficult lesson contents (School of Education Online, 2020). Learners and teachers who use technology in their classes find it very effective and engaging. An increase in enthusiasm for teaching and learning with technology, an improvement in student writing skills, an increase of authentic and purposeful use of technology are some of the benefits of technology integration (Donovan, L., Hartley, K., & Strudler, N. (2007). Therefore, the use of technology for classroom instruction is imperative in the academe especially that we are still grappling with the threats of the pandemic.

In the present investigation and as found out during the interview among instructors and college students, English college instructors made use of the digital tools in instructional delivery. It was found out that teachers find the use of gamification very helpful in their class especially during this time that students have short attention spans. A teacher said that gamification stimulates the attention of her students and it serves as an attention catcher to them. Another instructor said that she finds it very informative especially that she is not so techy and does not explore a lot in the use of technology. Another faculty also supported that the use of gamification made her class more interactive and her students were motivated to join her class. On the other hand, students mentioned that their teachers allowed them to enrich their experiences in the use of gamification. Students have also added that the school and stakeholders provided support in their use of gamification through webinars and tutorials to maximize their use.

This result suggests that the Technology Assistance Model (TAM) which focuses on modeling computer users and showing them how they can accept and adopt a new technology works well with these teachers and students. The perceived usefulness component in Technology Acceptance Model is the degree to which a computer system user believes that using a particular computer system will enhance his or her performance (Opoku, 2020). It usually refers to consumers' perceptions based on the outcome of their experience. On the other hand, the perceived ease of use of the system is how a user accepts and agrees that using an existing model is not costly. The instructors claimed that–

> "Employing Gamification in my online classes is quite helpful because every time I use it, I can easily catch the attention of my students [Instructor 1, Appendix F, lines 11-12].

> "When it comes to the positive effect, of course it stimulates the attention of the students. Somewhat it serves as an attention catcher to the students [Instructor 2, Appendix F, lines 127-128].

> "I do not have a lot of experiences but so far, I find it very informative especially to me because I am not that really techy and I do not really explore a lot [Instructor 3, Appendix F,lines 68-69].

"I think in general, it made my class more interactive and ahm, the students are also more motivated to join, participate in class, because I think they miss the interaction with the teachers for two years of using module [Instructor 4, Appendix F, lines 75-77].

"It really made my role as facilitator very smooth and easy. Thanks to technology [Instructor 5, Appendix F, line 80-81].

"I find gamification as positive because it's fun, the level of engagement tends to be higher which leads to increased retention. It is very helpful in today's new normal of education [Student 3, Appendix F].

As narrated by college instructors, they perceived gamification as integrated in their instruction as an aid to foster students' engagement. To answer the growing problem especially in students' engagement, made by adjustments to remote learning, research on technology integration and utilization in the English language teaching (ELT) classroom to enhance the teaching of English as second language (ESL) or a foreign language (EFL) has been popular in recent years because of its pedagogical contributions. Teachers, policy makers, and education scholars believe that technology integration supports both the teachers' pedagogical practices and the students' learning improvement (Costley, 2014; Parvin & Salam, 2015). College instructors also claimed that this integration is an essential tool in teaching and learning. This technology integration has been narrowed down by Gilakjani (2017), in his study, to educational games (EG) which are found to be as an effective learning tool as stated in various literatures. Garris et al (2015) have found that EGs are able to help students on various learning domains such as cognitive, affective as well as psychomotor skills. Among the EG findings that is widely discussed, is its ability to increase student motivation to learn. One of the most important factors in education is motivation to learn. This motivation to learn is supported by the claims of students during the interviews as seen in the transcripts.

Difficulty in accessing stable internet connectivity

The report by Akamai Technologies states that, the Philippines' 5.5 Mbps average internet connection speed is the slowest among 15 Asia Pacific countries (Porcalla, 2018 May). This situation has implications in the teaching and learning environment especially that today's distance learning mostly relies on strong and fast internet connection. Indeed, during the interviews of both instructors and college students, this was one of their concerns, the slow internet connection in their respective areas. In fact, all teachers unanimously said that one major problem that they encounter in integrating gamification is the poor and unstable internet connection. Even the students during the interview also stressed the same plight.

This is despite the fact of the RA 11494 or the Bayanihan to Recover as One Act enacted on September 11, 2020 which appropriated 300 million for education subsidy to eligible students and 3 billion for grants to State Universities and Colleges (SUCs) for their Smart Campus Development projects. The CHED Smart Campus Development

Project provided grants of a maximum of PhP25 million each to State Universities and Colleges (SUCs) for their project proposals designed to improve the implementation of flexible learning such as upgrading of internet connectivity, campus area network, learning management system, learner information system, smart classrooms, computer center for students, or multi-media center for faculty (Commission for Higher Education, 2021).

> "When it comes to the challenges in using it, of course on top of the list would be the internet connection. There are students who cannot participate well because their internet connection is not that really stable or good [Instructor 1, Appendix F].

> "Problems and challenges were first and foremost on the instructors' end is internet connection, still connectivity, ahm it's very hard on our part especially if there is no stable internet connection to conduct the online class [Instructor 2, Appendix F].

> "I think, the prominent problem is the internet connection because, although they have encountered problems in the application, but with the very slow connection I was not able to directly teach them how to manipulate the application [Instructor 4, Appendix F].

> "Poor connection, no stable internet connection, and bad processes of the apps are the problems and challenges that I observed [Student 4, Appendix F].

> "So far, the difficulties of using are it, is the low Internet connection while I am answering, the time run so fast together with the low connection and the pressure [Student 6, Appendix F]

2. Instructors and Students' View on Gamification

This section presents the instructors and students' view on gamification during online learning. The presentation follows these themes: (a) creates and provides opportunity for participation; (b) supplement learning in the online classroom; and (c) cannot replace traditional classroom set-up.

Creates and provides opportunity for participation

Moving a course an instructor designed from face-to-face delivery to a fully online "remote teaching" environment undoubtedly poses certain challenges. In a traditional classroom, students' engagement is already a challenge, how much more to online modality where we are fenced by computer screens. Although some aspects of the face-to-face course may remain unchanged; others, however, will have to adjust to accommodate the new ways in which students will be interacting with the course materials, and with each other (Ray, 2020). One seen way is through the use of gamification in an online classroom. The interview conducted to both teachers and students revealed that gamification provides opportunity for participation, and not just

listening to an entire discussion. Another faculty member also reiterated that it stimulates the attention of the students to learn. On the part of the students, they believe that gamification gives more positive impacts than its negatives, as it enhances critical thinking skills, creates a fun-learning environment, and helps everyone to be motivated and inspired in the class. These responses cohere to the study of Gilakjani (2017), of which he found out that educational games (EG) are effective learning tools as stated in various literatures. Garris et al (2015) also have found that EGs are able to help students on various learning domains such as cognitive, affective as well as psychomotor skills. Among the EG findings that is widely discussed, is its ability to increase student motivation to learn. Here are the words of both teachers and students:

> "kailangan nating gamitin itong platform na iyo, ahm of course, ahm, because it gives or it creates interaction noh or participation with your students and of course I think, ahm, it provide learning activities to the students noh. So yun. And I see it na parang nag e-enjoy sila noh, I see it na nag e-enoy sila if there is this kind of ano, of platform na hindi lang into listening on you know discussions like gmeet or zoom noh. So yun ang nakikita ko why positive siya for the students kasi ahm nag mo more participate yung mga students in attending our class because they are expecting mga ganitong kinds of games noh, or ganitong kind of platform na ginagamit for their quizzes, hindi lang siya ahm, ano hindi lang siya focusing on the topic or on the discussion but nag eenjoy sila" [Instructor 3, Appendix F]
>
> "but ah I think in general, it made my class more interactive and ahm, the students are also more motivated to join, participate in class" [Instructor 4]
>
> " For me, it is positive. Because gamification helps everyone to be motivated and inspired during classes." [Student 7]
>
> "Positive because it will enhanced the critical thinking skills of students by participating the gamification class." [Student 3]

Supplement learning in the online classroom

Researchers have found gamification to stimulate students' learning since this particular approach gives learners incentives to strive and persist in their studies (McNulty, 2021). Another positive aspect viewed by both teachers and students is the ability of gamification to supplement learning in the online classroom. Both respondents believe that it can aid learning, whenever used properly. One faculty member even highlighted that the integration of gamification in the main discussion is a big help for her, aside from it, being fun. On the other hand, students' general answers feature that since online learning hampers them to do hands-on activities, gamification makes it possible; thus, supplement their learning in the classroom. With the feedback provided by the online platform, students can actually see how close they are to their goals. Meanwhile, the study of Pahamzah et al (2020), reviewed the generations of learners that teach today and how these generations impacted the transformation of education. He also presented

some of the emerging technologies and discussed the transformation to invent new forms of teaching and learning as well as redesigning and rethinking education in the digital era. Results showed that usage of educational games like *quizziz* as a learning media can make students enthusiastic in participating in learning activities, so students can focus and maximize their mobile phone as a fun learning media. Here are the respondents' responses, verbatimly:

> "In my way of thinking I can say that it is a positive because of this Gamification aside of having fun we also learned and it supplement our understanding about the given topic." [Student 10]
>
> "it supplement the understanding of the students for me because once you do the gamification so during your topics in the gamification will be integrated to your main topic during class so while explaining during the discussion you can go back to the game that you did a while ago and then you connect the lesson itself so the topic or the understanding of the students of the topic I think for me will become concrete." [Instructor 5]

Moreover, according to McNulty (2021), besides the motivating stimulus gamification offers, it also gives learners immediate feedback which makes work exciting and engaging; gives students the ability to 'own' their learning – learning becomes more self-directed; makes the long-term benefits of learning more immediately recognizable and tangible; and makes learning more fun by increasing interactivity. This claim was supported by one of the students' responses, stating:

> "Gamification allows users to see how close they are to their set goals through feedback provided by the game providers. As such, children learn a very important aspect of judging how far or how close they are to their goals as determined by the feedback they get." [Student 1]

These responses can be directly associated with TAM's first component, perceived usefulness. As participants, both instructors and students believe that educational games enhance students' performance in an online class as gamification supplements learning in the classroom. This is supported by Opoku's (2020) claim which states that perceived usefulness usually refers to consumers' perceptions based on the outcome of their experience, and that is to enhance one's performance.

Cannot replace traditional classroom set-up

A traditional classroom is where an instructor moderates and regulates the flow of information and knowledge. Students are expected to continue developing their knowledge of a subject outside of school through homework exercises. Here, students' main resource is their instructor who only teaches them face-to-face (Traditional Classroom Definition and Meaning | Top Hat, 2020). With the pandemic, educational

sectors crafted their own continuity learning plan so that education can continue to thrive amidst the face-to-face hindrances. Institutions were forced to leave the traditional classrooms to move to the virtual ones such as Zoom and Google Meet. Instructors welcomed a lot of innovations to still make the learning environment not far from what we consider 'traditional'.

With every innovation comes pros and cons - so with how gamification can offer. However, when weighed on the impacts provided by gamification in online learning, the interview done to both respondents transpired that it has more perceived usefulness than the cautions. Although, it is also equally important to note these. One is that online learning cannot replace the traditional classroom set-up. Although the academe tried to embrace the new normal world through a lot of initiatives and innovations - from attending to various webinars and workshops, to equipping new skills relevant to teach 21st century learners in the pandemic - none of these actually prepared us for the battle the pandemic has brought. As a result, though both participants made mention in the interview that gamification is fun and offers a pleasant, energetic and motivating online classroom, it still cannot replace what a traditional classroom can provide where students can do the activities in a collaborative way. One faculty member also stated that gamification, if not used properly, just focusing on games may hamper learning.

Moreover, with the online modality, instructors observed that there is too much screen time, especially with the conduct of games. Instructors can only control the game through the time limit set but as to the possibility of opening their notebooks or other ways to answer questions, cannot be contained.

> "namimiss natin yung dati noh, so it dosn't really replace the traditional learning setup or strategies, so, mas maganda parin yung ahm face to face tayo and something na nakikita natin yung isa't-isa on how to do such work noh. And of course, ahm, napansin ko lang na when it comes to this platform, yung sa online." [Instructor 5]

On this note, students also gave another observation connected to having it in the traditional classroom. For them, a real classroom gives an opportunity for different learning styles than that of an online classroom. But just like any other classroom, any innovation done may or may not work with other students since no approach can be tailored-fit for everybody (Naparan, 2021). With this, students claim that:

> "Gamification is a powerful strategy that can yield fantastic results for the students. however, it can bring a negative effect that doesn't work with the rest of students learning because of the new setup outside the traditional classroom." [Student 3]

On this note, in the context of gamification, instructors should be well aware of this one caution seen in the responses. Deciding to gamify a learning activity on the assumption that everyone loves a game is another "wrong" reason to use gamification

(Kapp, 2013). Evaluating the audience that will be participating in the activity is an important step in the design process. Some students love games and competition, but others do not. Instructors should then use an approach that will appeal to their specific group of students.

In general, with the prevailing themes through the participants' responses, it can be gleaned that although instructors and students claim that online learning still cannot replace the learning environment of the traditional classroom, in the context of gamification, their views on gamification generally pose positive impacts stating that it creates and provides an avenue for participation and supplements the learning experience. With this, to optimally use its advantage in distance learning, an appropriate time of integrating it should then be considered.

3. Improvement of Gamification in Online Learning

This section presents the instructors and students' view on how to improve the use of gamification in online learning. The presentation follows these themes: (a) regulation on the use of gamification in instruction; (b) integration of gamification in instruction; (c) user and information friendly; and (d) aid for gadgets/technology.

Regulation on the use of gamification in instruction

An essential component of facilitating learning is understanding learners. The learning styles, attitudes and approaches of high school students differ from those of twenty-two-year-old university students (Oblinger, 2013). Research shows new generations of students are fundamentally different from former generations, mostly because of changes in their media consumption patterns (Bourgonjon, Valcke, Soetaert & Schellens, 2009). This generation of students grew up using hypertexts, social networking sites and video games. Thus it is argued that these students have gained specific technical skills, new ways of thinking and different learning preferences, which require a new educational approach (Oblinger & Oblinger, 2005; Prensky, 2011; Bourgonjon et al, 2009).

Thus, the study sought to get recommendations from the participants through their lived experiences. With their lived experiences, participants were able to give their recommendations as to how to improve the integration of gamification in online learning. One prevailing theme is the regulation on the use of gamification in instruction. The instructions have noted not only the challenges they have met, but also more to the students as they conduct online classes. With the mentioned challenges above, instructors believe that there should be an appropriate schedule for conducting gamification so students can also prepare as to their load subscription. One instructor proposed:

> "so maybe as instructors we will only employ gamification once a week or maybe twice a week, we really need to control the use of gamification because not all students have the luxury of the gadgets, luxury of the internet connection" [Instructor 4]

This was also supported by another faculty member stating that the implementation of the game to the students should be done in a gradual introduction; thus, should not be conducted or integrated on an everyday basis.

Appropriate integration of gamification in instruction

To help cater for different learning styles and those new to contemporary pedagogy, instructors and instructional designers need to effectively use elements of gaming in an educational context. Many theories have been suggested to account for the positive effect of games in learning. One is that, in order to move to higher levels of play, games require individuals to use prior knowledge, transfer new information into new situations, apply information in correct contexts, and learn from immediate feedback (Oblinger, 2004; Ozelik et al., 2013).

In context, another prevailing theme revealed by participants is the integration of gamification in the instruction. Instructors pointed out that there should be an appropriate part of the discussion to integrate gamification so that students can always prepare for it:

> "like if we condition already the kind of the students that gamification will always be part of the online classes like if they can understand that really gamify is like its normal already that every online class there should be a gamify, I think in due time, students may have appreciated or may take gamification as normal as new normal part of teaching and learning process." [Instructor 1]

Another instructor supported this claim recommending specific parts of the discussion where it should be integrated:

> "it can also be used in some parts only of the discussion like during the review or during the motivation." [Instructor 2]

He further emphasized the role of limited time as one of the disadvantages in integrating gamification during the assessment part:

> "As per experience, employing or using gamification in the assessment part is quite difficult because there is a time limit and the students don't like it. So, as for my classes, I don't employ gamification in the assessment. I only apply it during the motivation part or the review."

Choosing a user and information friendly e-game

TAM's second component, perceived ease of use of the system refers to how a user accepts and agrees that using an existing model is not costly. Therefore, it is not hard or difficult to understand the perceived innovation (Opoku, 2020). This component can be noted in the interview conducted to the participants. Both instructors and students believe that the instructions and directions on how to navigate the platform should be simple and friendly, especially for those who are not techy. Although educational sites have a lot of features to be employed and can be enjoyed, instructors should still try to elaborate difficult things in a simpler manner, so that students will not be hesitant to use it and will not have an initial negative attitude towards the platform. One instructor highlighted to keep it simple:

> "So, ahm, very simple lang siguro yung ano ko, yung suggestions ko. Maybe for me, just keep it simple, make it a people-friendly platform noh or site for both students and teachers kasi there are times talaga na on the first time talaga, parang hesitant tayo gamitin because pagdating palang dun sa letterboard sa site nay un, pag medyo critical yung introduction maybe or yung letterboard niya parang hesitant na tayong gamitin so make it simple lang and I think it is more useful noh for both kung magiging simple lang yung dating niya." [Instructor 5]

This was supported by another faculty narrating that gamification should be translated to students as a fun learning experience, instead of a hassle:

> "less engagement a simpler way of accessing the game maybe but just using their email add or maybe by just accessing directly using their school ID**.** What I'm trying to say is lesser a hassle in the end of the students in accessing the game would be better like no need to download the app or I think that's it. Ahm, the use suggestion in the use of gamification for the instructors and constantly using it in every online class you have for the students to be aware or to love it or present the gamify in a funny way or simple yet ahm worthy game that would be part of the class or discussion."

The same suggestions were given from the point of view of the students. Making things simpler for them is a great leap of help:

> "the instructors should provide learners a clear explanation and provide ways that can obtain knowledge in easy and clear way through improving their way of approaching or instructing students in online class."

Aid for gadgets/technology

As we move forward, the continual growth of information technologies requires that educators engaging in distance education look for new methods and theories for designing and delivering effective teaching (Picciano, 2001). As more and more courses

and programs move online, it is critical for instructors to understand culture relevant to online course structure expectations (Lee et al., 2012). Thus, the last prevailing theme common to both instructor and students - the giving of aid for gadgets or technology amongst respondents.

For the instructors, school initiatives have been given already to augment the need for gadgets so that online learning will continue to thrive. However, this would still be useless if students will not be receiving the same amount of support from the institution and other stakeholders. With this, respondents pointed out some suggestions highlighting the need for gadgets. For the instructors, providing assistance to technology would be the best aid:

> "I think ahm, the best suggestion that I can give is that maybe if the budget would allow, we can provide our students with ahm, technologies that they can use for the online class whether it would be in form of ahm, smartphones or in tablets, because other schools, ahm, were able to do that, and not just exposing them to webinars on how to use them noh but I think the main problem here is that the students do not have the gadgets ahm and that ahm they have difficulty looking or having stable connection"

Students also pointed out their recommendations align to the suggestions pointed out by the instructors:

> "My suggestion is that if possible school must provide a gadgets to the student who not have an technology access so that everybody can have access in games because this Games have been a way for children to spend their free time while having fun on the computer or smartphones. These games not only allow children to relax but also increases their ability to multitask."

- " Giving of free pocket wifi to those students who are in the areas that has poor signal"

In general, with the consolidated lived experiences of both participants, here are their seen points need of revision to better the implementation of gamification in an online classroom: (a) regulation on the use of gamification in instruction; (b) integration of gamification in instruction; (c) choosing a user and information friendly e-game; and (d) aid for gadgets/technology.

Conclusions

Based on the foregoing findings, the following conclusions were drawn:

1. College instructors and students are still exploring the different digital technologies. This suggests that given the right opportunities, they can eventually traverse the 21st century teaching and learning environment with ease especially in this trying time. Moreover, instructors and students also experienced problems in the use of gamification such as the limited training, poor and unstable internet connection.

However, the provision of technical assistance from the school such as load and sharing of practices was evident.

2. Both instructors and learners view gamification as an irreplaceable tool in their quest for learning. Initiatives from the school and other stakeholders in helping both college instructors and students were evident.

3. College instructors showed their classroom practices in the use of gamification in the teaching and learning process. They also emphasized proper regulation and integration of gamification in instruction as essential in achieving the learning outcomes of the course. Moreover, they pointed out the pivotal role of internet connection to a wholesome implementation of the course; thus, stakeholders and the institution should make this support a priority.

Recommendations

Based on the findings and conclusions of the study, the following are recommended:

Instructors. Course instructors are encouraged to review and revisit their course syllabus, now adding the integration of gamification in their online classes. A schedule as to the regulation of gamification in class should be reflected to guide and help students prepare in the specific session. This could also be done by college for more innovative strategies that seek to assist both instructors and students in the implementation.

Dean for Academics. The Dean for Academics is motivated to guide and support the crafting of a general online learning plan. A plan assigning each department of their schedule in integrating gamification in classes may be done.

Administration. As one of the extension activities of the institution, the administration should assist the adopted barangays through concrete programs highly relevant in the needs of the time. As internet connection is concerned, wireless internet connection points in adopted barangays may be provided for the student-residents there.

Alumni. NEMSU-Lianga alumni are encouraged to form social groups or programs in raising funds for the less-privileged students who have zero access to technology. These gadgets would truly be of help for students to still continue online learning during this distance education.

Compliance with Ethical Standards

The researchers sought permission from the Dean of Academic to conduct the study. A letter of consent was given to both participants informing them of the objectives and their roles in the study. With the student-participants, it was agreed that no pictures

of them during class observations would be posted in any form of social media. Responses shared by both participants were also taken with utmost confidentiality.

Moreso, there were no sensitive topics involved in the study. Students who opted not to continue participating in the study were allowed by withdrawing their consent to become participants. Their decision also not to answer follow-up questions were respected. The researchers valued their participation and placed their welfare as their highest priority during the study. Further, the researcher kept their records for this study confidential as far as permitted by law. Any identifiable information obtained in connection with this study remained confidential, except if necessary to protect the participants rights or welfare. The researchers can resist the release of information about their participation to people who are not connected with the study. When the results of the research are published or discussed in conferences, no identifiable information will be used. The conduct and results of this study is for research and education purposes only.

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PJPRuedas & HGPacatang

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GENDER PARTICIPATION IN THE SUSTAINABLE MANAGEMENT OF RESOURCES WITHIN UPLAND AGROFORESTS IN LA UNION, PHILIPPINES

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ABSTRACT

This study, conducted between February 25 and May 25, 2020, aimed to assess gender participation in sustainable resource management across three upland municipalities in La Union, Philippines. The research involved 145 respondents and employed descriptive statistics, including frequency counts, percentages, and means for data analysis. Findings revealed a predominant presence of male and married respondents, primarily leaseholders with extensive farming experience of nine years or more, cultivating an average area of 0.5 to 1.5 hectares. The majority reported a monthly income ranging from Php3,000 to Php5,000. Both male and female respondents exhibited moderate to very high levels of participation in project management, site preparation, maintenance, protection activities, and adoption of soil water conservation practices. Challenges encountered included irregular commitment of members and limited female participation in planning sessions, perceived as fairly serious by female respondents. However, male respondents did not rate these issues as significant. Overall, gender participation was not deemed critical across most project activities, suggesting potential areas for improvement.

Keywords: *Agroforestry, Gender participation, Soil and water conservation, Sustainable management, Upland*

INTRODUCTION

Situation Analysis

The Philippines is one of the world's largest archipelago nation situated in Southeast Asia in the Western Pacific Ocean. It is considered as one of the mega biodiversity countries in the world with a high percentage of flora and fauna endemism. Because of its archipelagic nature, Philippines is a culturally diverse country. With its topography consisting of mountainous terrains, dense forests, plains, and coastal areas, the Philippines is rich in biodiversity (United Nation Development Program, 2009).

Upland areas in the Philippines serve as the vital support system of the whole watershed continuum that activities in the areas may greatly influence the conditions in the lowland and coastal areas and a place where increasing population of the "poorest of the poor" lives and one which is expected to absorb more of the expanding population. The recent estimate of upland population in the Philippines is 17.8 M and 3.18 M households. However, if properly developed, it is a key to sustainable development and socio-economic progress. It can be a major government strategy to attain social stability (United Nation Development Program, 2009).

Uplanders also believe that they are the least addressed sector. Thus any form of assistance from the government or NGO's is a means of alleviating their socio-economic status. Majority of the 12 million populations of the Indigenous Peoples (IP's) reside in the upland which they claim as part of their traditional territories. Most of the remaining natural resources in the country are found within the traditional lands of Indigenous Peoples (IP's). The IP's represent nearly 14% of the country's population and considered poorest of the poor (Carig, 2012), the marginalized and the disadvantaged social group where illiterate, unemployed and where poverty is much higher than the rest of the population. In 2017, the percentage of families who rated themselves as poor was 50% in March, 44% in June, 47% in September and 44% in December, for an average quarterly rate of 46% for the whole year (Mangahas, 2018).

Rural development has been the goal of Philippine economic development for the reason that it has been the seat of age-long poverty and where the majority of the poor are still found in rural areas and in the agriculture sector, primarily as farmers and fishers. In 2012, extreme poverty in the Philippines was estimated at 19.2 percent of the population, or about 18.4 million people, based on the international poverty line of $1.25 per day. Urban poverty, however, has been increasing in recent years. Migrants without jobs or with low-paying jobs are unable to afford decent housing. As a result, Philippine cities have high proportions of informal settlers who are among the "poorest of the poor" (Liaco, 2014).

Despite of having widespread poverty, the Philippines has fared relatively well in Human Development Index (HDI), particularly in comparison to other Southeast Asian nations. In 2012, Philippines' economy outpaced the growth of its neighboring countries with 6.6 percent growth rate (Rappler, 2013).

The goals of upland development include increased productivity, enhance sustainability through soil, water and mineral conservation, enhanced community participation and increased equitability along with the guidelines on how to achieve them (Cruz, et al, 2014).

Conservation of soil and water resources is important for sustainability of agriculture and environment. Soil and water resources are under immense pressure due to ever increasing population, thereby ensuring growing demand for food, fiber and shelter. Soil and water resources are being deteriorated due to different anthropogenic and natural factors. Soil erosion is one of the several major deteriorative processes which results in deterioration of the soil. It is the removal of soil due to movement of water and/or air and may lead to the significant loss of soil productivity, thus may lead to the desertification under sever conditions. Water and wind are the major factors which are responsible of soil erosion. Deforestation, over-grazing, mismanagement of cultivated soils, intensive cultivation and intensive urbanization are major factors triggering the soil erosion. For sustainable agriculture and environment, it is pertinent for the protection of soil resources against erosion. Different control measures should be adopted to protect the soil resources against erosion. The concept of soil conservation cannot be materialized without conserving and efficient use of water resources. It is therefore pre-requisite that soil conservation practices should be adopted. Soil conservation practice include soil management, crop management, engineering, range management and forestry operation (Bashir et al., 2017).

Soil and Water Conservation are those activities at the local level which maintain or enhance the productive capacity of the land including soil, water and vegetation in areas prone to degradation (Rafanan, 2018).

Philippine forest cover have degenerated beacuse of massive logging activities, extreme poverty and shifting cultivation. Current deforestation rate has been estimated at 100,000 ha per year. There are about 20 million Filipinos living in upland watershed areas, half of whom are dependent on shifting cultivation for livelihood. The continous influx of migrant communities has further aggravated the diminishing forest resources. Given the dependence of human and social life of products from the forest from wood to water and to the oxygen they produce, these consequences impinge on all sectors of the society (Mapili, 2019).

On the enhanced community participation and improved equitability, the following must be considered: system should fit local farming practices, farmer's capabilities, provide security to the land they till and to the trees, crops and livestock they raise, farmers or their organization should be provided with assistance and other forms of incentives like:

social infrastructure land tenure processing of contracts, M & E of different activities, preparation of resource management plan and resource management utilization, provision of farm inputs, product processing linkages assistance for the provision of other support services, the project should be gender-sensitive; and the system should be compatible with the customs, traditions and beliefs of the participants. Poverty and inequality have been recurrent challenges in the Philippines and have again come to the fore in the wake of the current global financial crisis and rising food, fuel, and commodity prices experienced in 2008.

In any program/project development endeavor, participation of project beneficiaries both men and women is vital in order to succeed. Participatory development stresses the importance of peoples' participation as a key element toward relevant and sustainable program. Participatory development is a peoples' oriented approach when it elicits a community's ability to solve their own problems. However, as to who are involved or participate in that development endeavor has become a crucial issue, such as gender issue (Oakley, 1988).

Development analysts have recognized now for several decades the need to ensure that gender is examined and integrated into development projects. In integrating gender into development, practitioners are responding to the priority needs of women and men, and being aware of what benefits or adverse effects could impact either. In taking account of gender, development practitioners and social movement activists are looking at disparities that exist in male and female rights, responsibilities, access to and control over resources, and voice at household, community and national levels. Men and women often have different priorities, constraints and preferences with respect to development and can contribute to, and be affected differently by, development projects and campaigning interventions. To enhance effectiveness, these considerations must be addressed in all program and campaign design and interventions. If such considerations are not addressed thoughtfully and adequately, these interventions can lead not only to inefficient and unsustainable results, but may also exacerbate existing inequities. Understanding gender issues can enable projects to take account of these and build in capacity to deal with inequitable impacts and to ensure sustainability (Parpart et al., 2000).

The history of this field dates back to the 1950s, when studies of economic development first brought women into its discourse (Moser, 1993), focusing on women only as subjects of welfare policies – notably those centered on food aid and family planning. The focus of women in development increased throughout the decade, and by 1962, the United Nations General Assembly called for the Commission on the Status of Women to collaborate with the Secretary General and a number of other UN sectors to develop a longstanding program dedicated to women's advancement in developing countries. A decade later in 1970s, feminist economist Ester Boserup pioneered and published a book entitled "Women's Role in Economic Development". This radically shifted perspectives of development and contributed to the birth of what eventually became the gender and development field (Robinson and Ross, 2007).

An early approach involved targeting women by project design and interventions which focused on women as a separate group. This was commonly referred to as WID (Women in Development). Critics of this approach pointed out that this did not address men, and a later model usually referred to as GAD (Gender and Development) concentrated more on project design and interventions that were focused on a development process that transforms gender relations. This aimed to enable women to participate on an equal basis with men in determining their common future. The Gender Equality approach is therefore about men and women and is thus a more comprehensive approach to analysis and design of development interventions because it takes into account the situation and needs of both men and women. It aims to involve both women and men in addressing their development problems, to reform institutions to establish equal rights and opportunities, and to foster economic development which strengthens equal participation. Such an approach aims to redress persistent disparities in access to resources and the ability to speak out (Down to Earth, 2014).

Gender equality is considered a critical element in achieving decent work for all women and men, in order to effect social and institutional change that leads to sustainable development with equity and growth. Gender equality refers to equal rights, responsibilities and opportunities that all persons should enjoy, regardless of whether one is born male or female. In the Philippines, Lazaro (2000) reported that being married make farmers work harder, more receptive to innovations, hence, more productive. However, Elias (2013) stated that civil status has no bearing to technology receptiveness and adoption also not directly significantly correlated to participation.

Given that women are usually in a disadvantaged position in the workplace compared to men, promotion of gender equality implies explicit attention to women's needs and perspectives. At the same time, there are also significant negative effects of unequal power relations and expectations on men and boys due to stereotyping about what it means to be a male. Instead, both women and men, and boys and girls, should be free to develop their abilities and make choices – without limitations set by rigid gender roles and prejudices – based on personal interests and capacities.

International Labor Organization (2004) has adopted an integrated approach to gender equality and decent work. This means working to enhance equal employment opportunities through measures that also aim to improve women's access to education, skills training and healthcare – while taking women's role in the care economy adequately into account. Examples of these include implementing measures to help workers balance work and family responsibilities, and providing workplace incentives for the provision of childcare and parental leave.

The concept of bringing gender issues into the mainstream of society was clearly established as a global strategy for promoting gender equality in the Platform for Action adopted at the United Nations Fourth World Conference on Women, held in Beijing

(China) in 1995. It highlighted the necessity to ensure that gender equality is a primary goal in all area(s) of social and economic development (Council of Europe, 2020).

Furthermore, mainstreaming a gender perspective is the process of assessing the implications for women and men of any planned action, including legislation, policies or programs, in any area and at all levels. It is a strategy for making the concerns and experiences of women as well as of men an integral part of the design, implementation, monitoring and evaluation of policies and programs in all political, economic and societal spheres, so that women and men benefit equally, and inequality is not perpetuated. The ultimate goal of mainstreaming is to achieve gender equality.

The twin challenges of building pathways to sustainable development and achieving gender equality have never been more pressing. As the world moves towards the post-2015 development agenda, the present World Survey not only shows why each challenge is so important, but also who both challenges must be addressed together in ways that fully realize the human rights of women and girls and help countries to make the transition to sustainable development. The centrality of gender equality, women's empowerment and the realization of women's rights in achieving sustainable development has been increasingly recognized in recent decades. This recognition is evident in a number of international norms and agreements, including principle 20 of the Rio Declaration on Environment and Development, adopted in 1992, in its statement regarding the full participation of women being essential to achieving sustainable development (Council of Europe, 2020).

In the context of the world of work, equality between women and men includes the following elements: equality of opportunity and treatment in employment, equal remuneration for work of equal value, equal access to safe and healthy working environments and to social security, equality in association and collective bargaining, equality in obtaining meaningful career development, balance between work and home life that is fair to both women and men, and equal participation in decision-making at all levels (International Labor Organization, 2004).

GAD focuses on the principle that development is for all; male or female and that they should enjoy equal rights and opportunities to achieve a full and meaningful satisfying life. It recognizes the legitimacy of gender equality as fundamental value that should be reflected in development. It is also a means for achieving development. It contends that women are active agenda of development and not just passive recipient of development assistance (Natan, 2018).

GAD focus primarily on two major frameworks, Gender Roles and Social Relations Analysis. Gender role focus on social construction of identities within the household, it also reveals the expectations from 'maleness and femaleness' in their relative access to resources. Social relations analysis exposes the social dimensions of hierarchical power relations imbedded in social institutions; also it's determining influence on 'the relative position of men and women in society. In an attempt to create gender equality, (denoting

women having same opportunities as men, including ability to participate in the public sphere) GAD policies aim to redefine traditional gender role expectations (De Guzman, 2020). The Philippine Plan for Gender and Development, 1995-2025, is a National Plan that addresses, provides and pursues full equality and development for men and women. Approved and adopted by former President Fidel V. Ramos as Executive No. 273, on September 8, 1995, it is the successor of the Philippine Development Plan for Women, 1989-1992 adopted by Executive No. 348 of February 17, 1989.

Three years after, DENR Administrative Order No. 98 – 15 dated May 27, 1998 came up as the Revised Guidelines on the Implementation of Gender and Development (GAD) Activities in the Department of Environment and Natural Resources (DENR) in order to strengthen the DENR GAD Focal Point System and accomplishing the GAD vision "Partnership of Empowered Men and Women for Sustainable Development".

Republic Act No. 9710, otherwise known as the Magna Carta of Women was approved on August 14, 2009 which mandates non-discriminatory and pro-gender equality and equity measures to enable women's participation in the formulation, implementation and evaluation of policies and plan for national, regional and local development (PITAHC, 2019). A Memorandum Circular No. 2011 – 01 dated October 21, 2011 was released addressing to all Government Departments including their attached agencies, offices, bureaus, State Universalities and Colleges (SUCs), Government-Owned and Controlled Corporations (GOCCs) and all other government instrumentalities as their guidelines and procedures for the establishment, strengthening and institutionalization of the GAD Focal Point System (GFPS).

Moreover, meaningful participation requires that individuals are entitled to participate in the decisions that directly affect them, including in the design, implementation, and monitoring of health interventions. In practice, meaningful participation may take on a number of different forms, including informing people with balanced, objective information, consulting the community to gain feedback from the affected population, involving or working directly with communities, collaborating by partnering with affected communities in each aspect of decision making including the development of alternatives and identification of solutions, and empowering communities to retain ultimate control over the key decisions that affect their wellbeing.

Gender equality has a strong anxiety to the world and their interest was to address differences between man and women in terms of needs and responsibilities. In their effort to achieve this in Nigeria, government established Women in Agricultural extension (WIA) programme by the Federal Ministry of Agriculture and World Bank and put it under Agricultural Development Programme (ADP) so that they will help women in accessing the agricultural information, resources and reduce gender discrepancy level . This approach also called Women in Agriculture (WIA). With this, Agricultural Development Programme is facing serious challenges of gender inequality and their main problem is poor understanding of what gender means. Gender is a principal organiser and controller

of activities between people in Agricultural production, reproduction, distribution and consumption. It also means roles and responsibilities and it depends on the cultural belief of the society giving to man and woman. Inability to understand gender may result to gender blindness and increases gender differences. Good understanding of gender will help programme planners and policy makers in agricultural development to achieve their objectives. Gender did not mean men or women rather how they associate. Gender is a social practice, idea and attributes giving to male or female (Chekene, 2018).

The contribution of women to agricultural development will not be overemphasized. Women provide 60-80% of food and more than half of the global foods are supply by the women. Women spend 85-90% of labour force on household food processing and preparation. Time allocation study found that women labour is highly significant than man. Moreover, girls do more work in household than boys. Again 60- 90% of total farm work is done by women. These covered wide range of activities such as land clearing, tilling, weeding, planting, and application of fertilizer, harvesting, threshing, winnowing, milling, transporting and marketing among others. Despite these facts, agricultural and economic policies give less priority to female. In Africa if gender equality been adopted properly it may result to (20%- 30%) increase in yield output and 2.5-4.0% increase in global yield and this will alleviate global hunger by 12-17% (Doss, 2011).

The Gender And Development (GAD) give emphasis on both men and women and how they interact to one another. This will reduce gender inequality, promote gender equality, power relation and brings solution to developmental problems. This GAD approach considered gender at the center focal point of development and its gender related approach. This approach addresses women that experience restrictions in accessing resources, empowerment and participation through equal treatment given to all. Gender And Development consider both men and women address inequalities that prevent development, and this commitment will be sustainable for future. Holistic approach of GAD has impact on developmental agenda in many sectors. Therefore, agricultural production system may find it difficult to separate women from men (Kashim 2018).

To enhance the efficacy and responsiveness of diverse projects and programs aimed at advancing the sustainable management of resources within agroforests, forests, and watersheds, thereby contributing to environmental quality and the betterment of residents' lives, with a particular emphasis on fostering gender inclusion, this research endeavor is initiated.

Framework of the Study

The study is guided by the principle and concept of gender participation on the roles of men and women. The framework of the study employs the input-process-output model (Figure 1). The input variables are the socio- demographic profile of the respondents, gender participation of the respondents in project management, site preparation, and maintenance and protection activities within upland agroforests, gender participation on

the adopted soil and water conservation practices, support/assistance provided by the government and other agencies and problems encountered by the respondents.

The process involved the formulation of a questionnaire, pre-testing and floating of questionnaires combined with direct interview and observation method, survey and presentation of data gathered and the analysis of data.The outputs are the status of gender participation in the sustainable management of resources within upland agroforests.

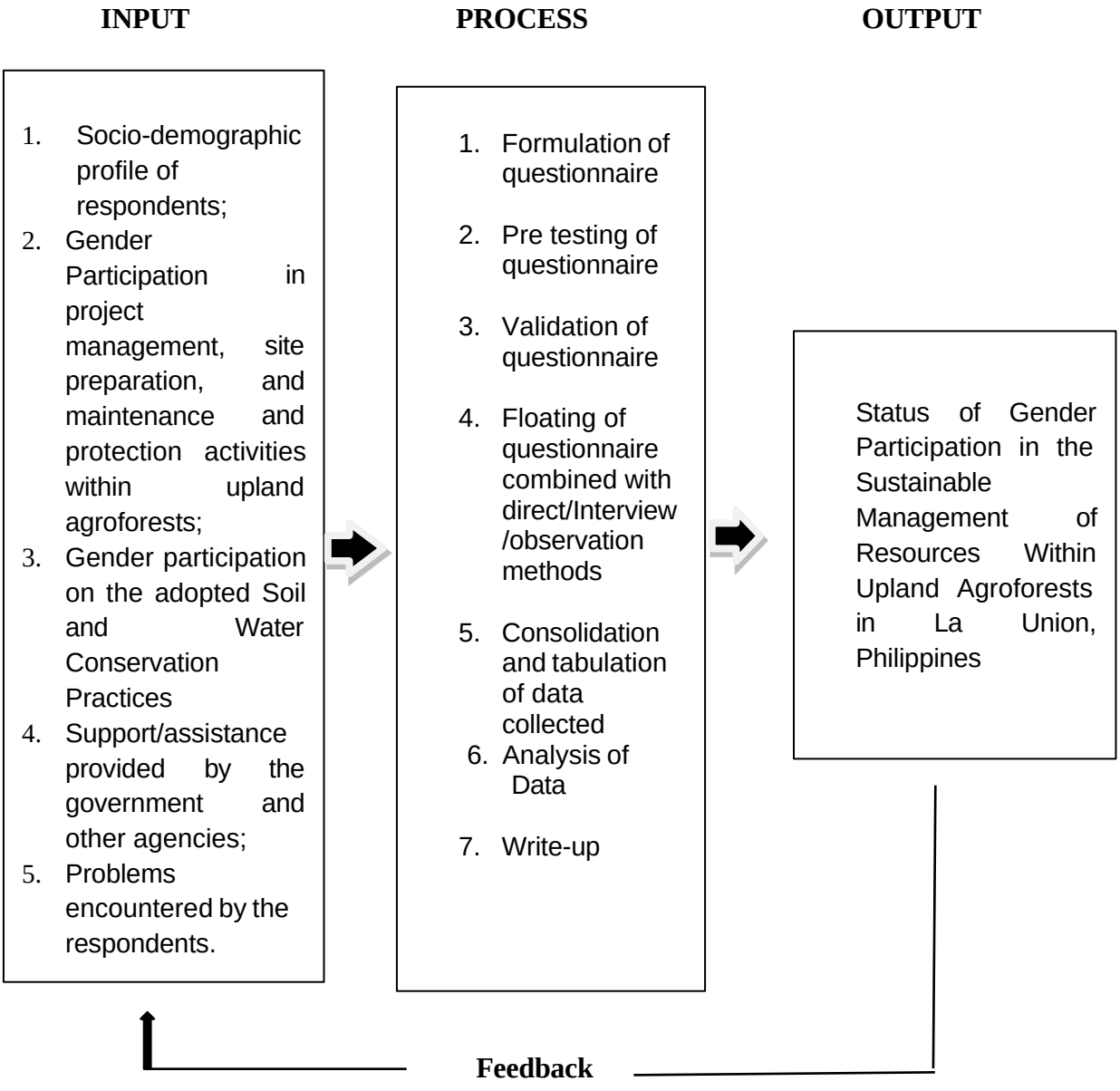


Fig 1. Framework of the Study

Research Questions

Generally, this study aimed to determine the gender participation in the sustainable management of resources within upland agroforests.

Specifically, it attempted to answer the following questions:

1. What are the socio-demographic profile of respondents in barangay Arosip, Bacnotan, barangay Lacong, San Gabriel and barangay Casilagan in Naguilian, La Union, Philippines?

2. What is the extent of gender participation of the respondents in project management, site preparation, and maintenance and protection activities within upland agroforests?

3. What is the extent of gender participation in the adopted soil and water conservation practices?

4. What are the support/assistance provided by the government and other agencies?

5. What is the degree of seriousness of the problems encountered by the respondents with regards to sustainable management of resources within upland agroforests?

Definition of Terms

Agroforestry is the growing of trees and association of crops or animals by the respondents.

Alley cropping refers to the cultivation of food, forage or specialty crops between rows of trees that is adopted by the respondents.

Conservation refers to the wise utilization of soil, water and natural resources found in the area.

Development refers to the significant positive change within the area.

Diversion canal refers to the soil and water conservation practice of the respondents to divert surface run offs to other bodies of water.

Gender participation refers to the involvement of male and female respondents in the management and development of the CAFF Upland Development Extension Project.

Intercropping refers to one of the soil and water conservation practices of the respondents which involve growing two or more crops in the same unit of land.

Mulching refers to the soil and water conservation practice adopted by the respondents which is application of some materials to the surface of the soil to retain soil moisture.

Multiple cropping refers to the various crops cultivated in a given unit of land.

Participatory approach refers to the involvement of people in the community in project planning, implementation and decision making.
Pre-test is a survey conducted in collecting data from the respondents before the final survey to further improve the contents of the questionnaire.

Reforestation refers to tree planting, replanting and regeneration activities in the barangay.

Respondents refer to the recipients/beneficiaries of the upland development extension projects of the College of Agroforestry and Forestry in barangay Arosip, Bacnotan, barangay Lacong, San Gabriel and barangay Casilagan, La Union who were interviewed and were responsible in supplying the necessary information asked in the questionnaire.

Socio-demographic profile refers to the characteristics of the respondents which include age, gender, education, income and location/study sites.

Soil and Water Conservation (SWC) practices are the practices such as intercropping, multiple cropping, terracing, mulching, alley cropping, water harvesting and other activities adopted by respondents in their farms.

Sustainable management is a handling of resources that meets the needs of the present generation while sustaining the needs of the future generation.

Uplands are the areas where the respondents reside and make a living.

Terracing refers to the soil conservation practice applied to prevent rainfall runoff on sloping land from accumulating and causing serious erosion which was adopted by the respondents.

Water harvesting refers to the collection of runoff for productive use that is adopted by the respondents.

METHODOLOGY

Research Design

The descriptive statistics was used in the study. It described the natural situation as it exist at the time of the study and explore the case of the particular phenomena with the use of a prepared questionnaire with direct interview and observation methods to the different respondents.

Sources of Data

There were 145 respondents composed of families and barangay officials coming from barangays Arosip, Casilagan, and Lacong within the municipalities of Bacnotan, Naguilian and San Gabriel, La Union (Table 1).

The study was conducted from February to May 2020. The locale of the study is presented in Figure 2.

Table 1. Distribution of Respondents by Location

Location/Barangay	Male (n)	Percentage (%)	Female (n)	Percentage (%)
1. Arosip, Bacnotan, La Union	32	34.04	18	35.29
2. Casilagan, Naguilian, La Union	44	46.80	26	50.98
3. Lacong, San Gabriel, La Union	18	19.14	7	13.73
Total:	**94**	**100.00**	**51**	**100.00**

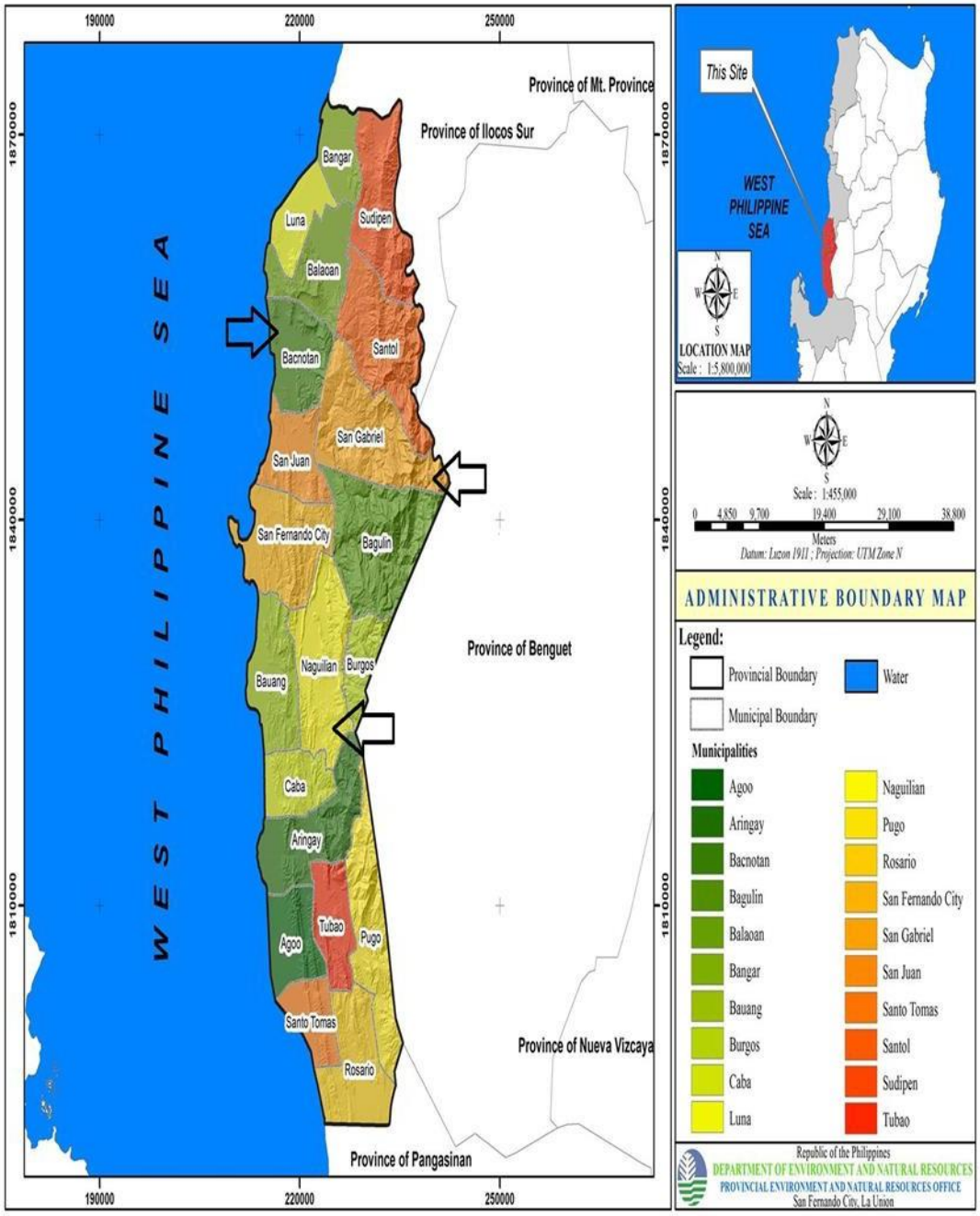


Fig 2. Locale of the Study

Instrumentation and Data Collection

Communications (Appendix A) were sent to the barangay officials prior to the conduct of the survey. Coordination was properly observed. Letters were addressed to the head officials requesting permission to gather the needed data from the respondents of the study (Plates 1 & 2).





Plate 1. Coordination of the Researcher with the Barangay. Captain Ferlyn Santiago of Arosip, Bacnotan, La Union



Plate 2. Coordination of the Researcher with the Barangay Captain Dominador Lilan of Lacong, San Gabriel, La Union

Questionnaires (Appendix B) were prepared, pre-tested and finalized prior to the distribution/administration of the improved questionnaires to the respondents.
Floating of questionnaires coupled with direct interview and observation was done during the actual visit to the area. Barangay officials, community leaders, elders and other selected members of the community were interviewed. The purpose of the interview is to validate the data from the socio-demographic profile of respondents particularly on their customs, traditions, and other practices on forest resource utilization and upland agriculture.

Focus group discussion was conducted during an assembly of the three upland barangays to further confirm other information and data to determine their awareness, insights and expectations regarding sustainable management of resources within upland agroforests. Sample photos on the gathering of data from the barangays are presented in Plates 3 and 4.



Plate 3. Conduct of Interview in Barangay Casilagan, Naguilian, La Union



Plate 4. The Researcher Interviewing Two Respondents in Barangay Lacong, San Gabriel, La Union

The data collected were as follows: 1. socio-demographic profile of respondents; 2. gender participation on the different activities of regarding sustainable management of resources within upland agroforests 3. gender participation on the adopted Soil and Water Conservation (SWC) practices; 5. support/assistance provided by the government and other agencies and; 6. problems encountered by the recipients of the projects.

Analysis of Data

The data collected were tabulated, presented, and analyzed using the descriptive statistical tools such as frequency counts, percentages and means.

On the gender participation of the respondents in project management, site preparation, and maintenance and protection activities within upland agroforests and adopted soil and water conservation practices, the descriptive quantitative and range of values were used in the interpretation of data shown below.

Numerical Values	Range Values	Descriptive Rating
5	4.20 - 5.00	Very Highly Participated
4	3.40 - 4.19	Highly Participated
3	2.60 - 3.39	Moderately Participated
2	1.80 - 2.59	Fairly Participated
1	1.00 - 1.79	Not Participated

The data on the degree of seriousness of the problems encountered by the were interpreted following the numerical values, range of values and descriptive rating shown below.

Numerical Values	Range Values	Descriptive Rating
5	4.20 - 5.00	Very Highly Serious
4	3.40 - 4.19	Highly Serious
3	2.60 - 3.39	Moderately Serious
2	1.80 - 2.59	Fairly Serious
1	1.00 - 1.79	Not Serious

RESULTS AND DISCUSSION

Socio-demographic Profile

Table 2 shows the socio-demographic profile of respondents in terms of age, gender, civil status, educational attainment, tenure of land, land area cultivated, monthly income, occupation aside from farming and distance of their houses to the farms.

Gender

A great majority (94 or 64.83%) of the respondents are male while many of the female respondents are 51 or 35.17%. This implies that upland farming is dominated by men.

Age

The table presents that many (48 or 33.10%) of the respondents belonged to the age bracket of 41-50 years, 36 or 24.83% belonged to 51-60, 29 or 20% are 61 years and above, few (19 or 13.10%) are ages 21-30 years and 13 or 8.97% belonged to the age bracket of 31-40 years old. This confirmed the report from the data of the Philippine Institute for Development studies as shown on Figure 3 that majority (61.50%) of the workers in the agriculture field belong to the age bracket 25-54 in 2015 as well in 2008. It further explains that since 2008, the age profile of agricultural workers has increased slightly, i.e. higher proportion of older workers, and a smaller proportion of youngest workers. This is consistent with long term trends in farming: the average age of 46 to 56 years in 1966. Aging of farmers is common to developing countries, where younger workers tend to opt for nonfarm occupations (Cabiladas, 2019).

Civil Status

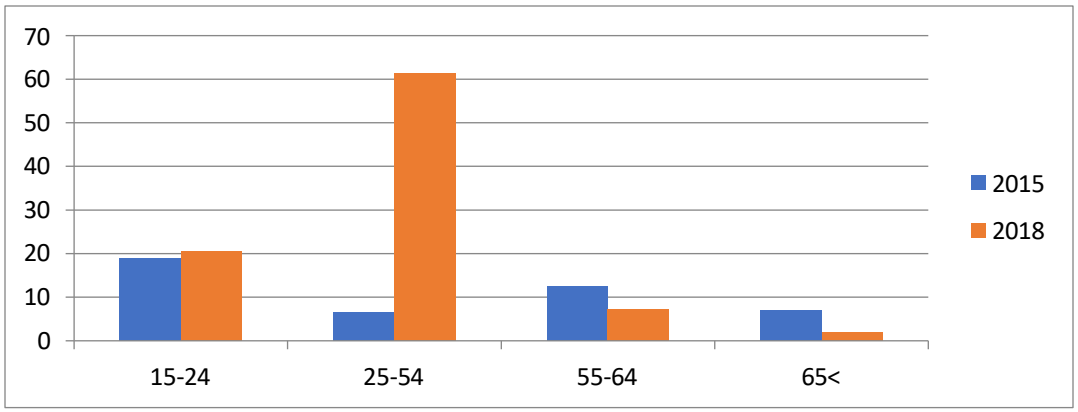
A great majority (104 or 71.72%) of respondents are married, few (29 or 20%) are single and 12 or 8.28% are widowed. This implies that the respondents are generally of the middle age and are still capable of farming activities for quite a number of years. According to the findings of Elias (2013), civil status has no bearing to technology receptiveness and adoption and also not directly significantly correlated to participation.

Table 2. Socio-demographic Profile of Respondents

Profile	Frequency (f)	Percentage (%)
Gender		
Male	94	64.83
Female	51	35.17
Total	**145**	**100.00**
Age		
21-30	19	13.10
31-40	13	8.97
41-50	48	33.10
51-60	36	24.83
61 years & above	29	20.00
Total	**145**	**100.00**
Civil Status		
Single	29	20.00
Married	104	71.72
Widower	12	8.28
Total	**145**	**100.00**
Educational Attainment		
Elementary	56	36.62
High School	53	36.55
Vocational	22	15.17
College	14	9.66
Total	**145**	**100.00**
Tenure of Land		
Owner Operator	57	39.31
Leaseholder/Tenant	88	60.69
Total	**145**	**100.00**
Number of Years in Farming		
5 years and below	27	18.62
6-8 years	37	25.52
9 years & above	81	55.86
Total	**145**	**100.00**
Land Area Cultivation		
Below 1 ha.	60	41.38
1-5 has.	67	46.21
11 has. & above	18	12.41
Total	**145**	**100.00**

Continuation of Table 2

Profile	Frequency (f)	Percentage (%)
Monthly Income		
3, 000 & below	27	18.62
3,001 – 5,000	56	38.62
5,001 – 7,000	28	19.31
7,001 – 9,000	20	13.79
9,001 & above	14	9.66
Total	**145**	**100.00**
Occupation Aside From Farming		
Gov't worker/official	21	14.48
Laborer	59	40.69
Store owner/ buy & sell	33	22.76
Caretaker	8	5.52
Carpentry	9	6.21
Jeepney Driver	7	4.83
OFW	8	5.52
Total	**145**	**100.00**
Distance of the Households to the Farms		
500 m & below	44	30.34
501 m to 1km	57	39.31
1.1 km to 2km	30	20.69
2.1 km & above	14	9.66
Total	**145**	**100.00**



Source: Philippine Institute for Development Studies (Briones, 2017)

Fig. 3. Distribution of Workers by Age Bracket in Agriculture Sector, 2015 and 2008 (%)

Educational Attainment

Many of the respondents are elementary (56 or 36.62%) and high school (53 or 36.55%) graduates, few of them have vocational course (22 or 15.17%) and 14 or 9.66% are college graduates. This scenario is common in upland areas. Their incapability to access higher level of education is constrained due to poverty which was mentioned during the interview. Poverty is a multifaceted problem that includes factors such as finances, food supply, health, housing, sanitation, politics, infrastructure, war, and education (Walingo,2006).

Studies showed that poverty levels are strongly linked to educational attainment. Two-thirds of poor households are headed by people with only an elementary school education or below. Access to quality education is identified as a key pathway out of poverty. Low national levels of education are detrimental to development under any circumstances; but in the fast developing, technologically globalized world the need for adult education and lifelong learning strategies for all populations is particularly urgent. Without such education, each household's ability to resist societal challenges and shocks is compromised, and human capital decreases. The recognition of the need to improve household food security and women's economic empowerment follows upon the realization of the great role they play as gatekeepers to national development and nutrition. This situation has led to the implementation of agricultural projects that target women smallholder farmers, projects that constitute one of the major strategies to expand agricultural output in rural areas (Dixon, 2017).

In Brazil, education is considered the correct way towards promoting equal conditions between men and women. In their schools, policies were aimed at encouraging non-discriminatory practices, respect for diversity and sexual orientation, as well as encouraging the interests of girls in non-traditional disciplines (Child Fund International, 2019).

The importance of education in developing countries cannot be overstated. Education can be the catalyst needed to pull families and communities out of the cycle of poverty. Knowledge gives children the power to dream of a better future and the confidence needed to pursue a full education, which in turn will help generations to come. Education also makes a significant difference for adults, particularly when it applies to day-to-day life, including nutrition, healthcare and gender equity. When adults learn, they become role models to their children, who also wish to learn. Moreover, education improves gender equity and breaks the cycle of poverty (Child Fund International, 2019).

Tenure of Land

Results showed that a great majority of the respondents (88 or 60.69%) are leaseholders or tenants while the remaining 57 or 39.31% are owner operators. The upland areas are the place where increasing population of the “poorest of the poor” lives and where most of its population do not own the land they till ending them up as leaseholders or tenants. This condition conforms with the study of Cruz et al. (1986), that the sloping uplands occupy about 55 percent of the with an estimated upland inhabitants of 17.8 million who are primarily poor farming families with insecure land tenure (United Nation Development Program, 2009).

Monthly Income

Many (56 or 38.62%) of the respondents earn a monthly income of Php. 3,001 to Php. 5,000, 28 or 19.31% earn Php. 5,001 to Php. 7,000, 27 or 18.62% earn below Php. 3,000, and few (14 or 9.66%) earn an income of Php. 9, 0001 and above. This indicates that their low income could hardly sustain the basic needs of their families. This situation is attributed with the small farm size they are cultivating, thus limiting agricultural production.

Occupation aside from Farming

Many (59 or 40.69%) of the respondents are laborers, 33 or 22.76% are store owners or engaged in buying and selling of goods, 21 or 14.48% are government workers or officials, 9 or 6.21% are carpenters, few (8 or 5.52"%) are caretakers and OFW’s, and 7 or 4.83% are jeepney drivers. As residents of upland areas, “hand to mouth subsistence” is prevalent where farming is the primary source to earn a living but they opted to engage in other jobs/occupations for additional income to provide the needs of their families.

Distance of Household to Farms

Many of the respondents (57 or 39.31%) lived within 501 meters to 1 kilometer from their farms. The rest lived (44 or 30.34%) 500 meters to 1 kilometer, (30 or 20.69%) lived 1.1 to 2 kilometers, and 14 or 9.66% lived 2.1 kilometers and above which is closer to the farms they till.

The uplands are characterized as rolling to steep areas where both agriculture and forestry are practiced on slopes ranging upward from 18 percent. Distance of household to the farm is also a common feature in the upland communities. Nevertheless, distances of their households to the farms is a slight problem because the residents are used to walking far distances in the inaccessibility of good roads from farm to households as well as market where they bring to sell their agricultural products.

Gender Participation in Various Project Management, Site Preparation, and Maintenance and Protection Activities Within Upland Agroforests

Project management is the practice of leading the work of a team to achieve goals and meet success at a specified time. To achieve all of the set goals is the primary challenge of project management. It is the application of knowledge, skills, tools, and techniques applied to project activities in order to meet the project requirements. Project management is a process that includes planning, putting the project plan into action, and measuring progress and performance.

Members/beneficiaries (men and women) of the project can participate in a variety of ways, and to different levels of influence, in identifying needs, generating solutions, planning new initiatives and service delivery to ensure an effective implementation of the different activities under the program management.

Table 3 presents gender participation on the different activities of sustainable management of resources within upland agroforests. There are two categories of activities considered namely: (a) project management that includes attendance to meetings, discussion, financial management and planning/decision making; and (b) site preparation, maintenance and protection activities such as weeding/clearing, hole digging, planting, watering, fertilizing and replanting.

Table 3. Gender Participation in the Project Management, Site Preparation and Maintenance and Protection Activities Within Upland Agroforests

Activities	Men		Women	
	Numerical Rating	Descriptive Rating	Numerical Rating	Descriptive Rating
A. Project Management				
• Attendance to meetings	4.43	Very Highly Participated	3.84	Highly Participated
• Discussions	4.09	Highly Participated	3.26	Moderately Participated
• Financial management	3.31	Moderately Participated	4.10	Very Highly Participated
• Planning/decision making	3.20	Highly Participated	2.75	Moderately Participated
B. Site Preparation, Maintenance and Protection				
• Weeding/Clearing	3.70	Highly Participated	3.00	Moderately Participated
• Hole Digging	3.54	Highly Participated	2.59	Fairly Participated
• Planting	4.21	Very Highly Participated	3.68	Highly Participated

• Watering	3.70	Highly Participated	3.09	Moderately Participated
• Fertilizing	2.97	Moderately Participated	2.16	Fairly Participated
• Replanting	4.06	Very Highly Participated	3.24	Moderately Participated

Findings revealed that the male respondents registered very highly in their attendance (4.43) as against their female counterpart with a rating of 3.84 which is highly participated. From the interview, women claimed that their attendance to meetings was due to their household chores and have to attend to the needs of their children. Instead, their husbands take the responsibility in attending the meetings called for by their officials.

As to the discussions on the management of the project, men rated highly participated (4.09) while women are moderately participated (3.26). This holds true to the report of Edwards (2020) that women were afraid to speak up during meetings for they thought that they did not have good ideas, do not want to speak too loud or aggressive, do not think on their feet, or were afraid of being wrong. She added that a woman speaks up in the workplace, she walks a thin tightrope: asserting her views without coming across as too loud or aggressive. As a result, many women opt to stay silent rather than risk saying something wrong (Edwards, 2017). She also reported men do a whopping 75% of the talking during the average business meeting. Preliminary results from Partners In Leadership research confirmed this finding that women above men still struggle to find their voice in the room.

In financial management, men have moderate participation (3.31) and the women have very highly participation (4.1). During the 2015 World Bank Financial Capability Survey, it was reported that women have higher financial literacy than men (World Bank, 2010).

Projects are the basic building blocks of development. Without successful project identification, preparation and implementation, development plans are no more than wishes and developing nations would remain stagnant or regress. Projects, Adams (2019) claims, projects are the “cutting edge” of development. Hirschman calls them “privileged particles of the development process. Programs and projects are increasingly used in developing countries in the process of economic and social development,” the United Nations proclaims. “They represent a crucial element in both the formulation and implementation of development plans. Most of the administrators are more directly concerned with program and project administration than with other, more generic aspects of public administration.” For nearly a quarter of a century, projects have also been the primary instruments for grant, credit, loan and technical aid to developing countries by international assistance agencies.

Within the home, as outside it, power and authority tend to rest on men, but the women have their own areas of authority. Women decide on how their children will be raised and

educated, how earnings will be allocated, when and how much of their crop harvest will be sold, and what to feed their families. In contrast, men have greater say in such matters as investment, loans, and even the choice of contraceptive method (Shibata et al, 2020). But in some lowland Christian communities, women claim that even investments and loans are decided jointly by them and their spouses. Among rural households, however, women's decision-making power is almost nonexistent as there is very little chance for the children to stay in school, or very little earnings to be budgeted. Among some cultural groups in the Philippines, not even the children or the budget are considered as women's domain. Indeed, for women of these groups, there are too few opportunities for sharing power and too little decisions to be made. Information from group interviews conducted by the author in March 1994 suggests that part of the problem is women's ignorance about their legal rights, a concern overshadowed by the day-to-day anxieties of basic survival (Watson et al., 1999).

The participation of the male respondents obtained highly participation during planning sessions (3.20) while their female counterpart registered moderate participation (2.75).

It was mentioned by Davies et al. (2002) that in order for the planning profession to properly understand and accommodate women, planning professionals must consider women’s uses and experiences of public space to be legitimate and important. He further stated that professional urban planners and designers and local government officials should not only seek women’s active participation and input in planning processes, but they should also ensure that this participation and input is valued and used. Sometimes, women and girls do not communicate in the same way that professionals and decision-makers do. Women and girls might talk about their emotions and reactions instead of just plain facts. This can be difficult for professionals and decision-makers to understand at first. However, this does not mean that women’s and girls’ use and experiences of public space are not legitimate and important.

On site preparation, maintenance and protection, men rated very highly participated on planting (4.21) and replanting (4.06), highly participated on weeding (3.70), hole digging (3.54) and watering (3.70) while women rated high participation (3.68) on planting and other activities were rated moderate and fair participation. This result is medicating that men are doing more hard work in the farm compared to women.

Gender Participation in the Adopted Soil and Water Conservation Practices

Table 4 shows the Soil and Water Conservation practices adopted by the respondents. Male respondents have very high participation on agroforestry (5.0), alley

Table 4. Gender Participation in the Adopted Soil and Water Conservation (SWC) Practices

SWC Practices	Men		Women	
	Numeric Rating	Descriptive Rating	Numeric Rating	Descriptive Rating
1. Agroforestry (Agrisilvicultural Silvipastoral Agrisilvipastoral Intercropping)	5.0	Very Highly Adopted	4.61	Very Highly Participated
2. Alley cropping	3.46	Very Highly Adopted	3.04	Very Highly Participated
3. Multiple cropping	4.29	Very Highly Adopted	4.45	Very Highly Participated
4. Terracing	4.57	Very Highly Adopted	3.55	Highly Participated
5. Reforestation/ afforestation	4.76	Very Highly Adopted	4.92	Very Highly Participated
6. Establishment of water harvester	4.67	Very Highly Adopted	3.49	Highly Participated
7. Diversion Canal	4.77	Very Highly Adopted	3.78	Highly Participated
8. Mulching	2.39	Fairly Adopted	2.24	Fairly Participated

cropping (3.46), multiple cropping (4.29), terracing (4.57), establishment of water harvester (4.67), reforestation and afforestation (4.76), establishment of diversion canals (4.77), while mulching is fairly adopted (2.39) by men. On the other hand, women have rated very highly participation to agroforestry (4.61), alley cropping (3.04), multiple cropping (4.45) and reforestation/afforestation (4.92).



Plate 5. Agroforestry System (integration of trees, crops animal) in Arosip, Bacnotan, La Union

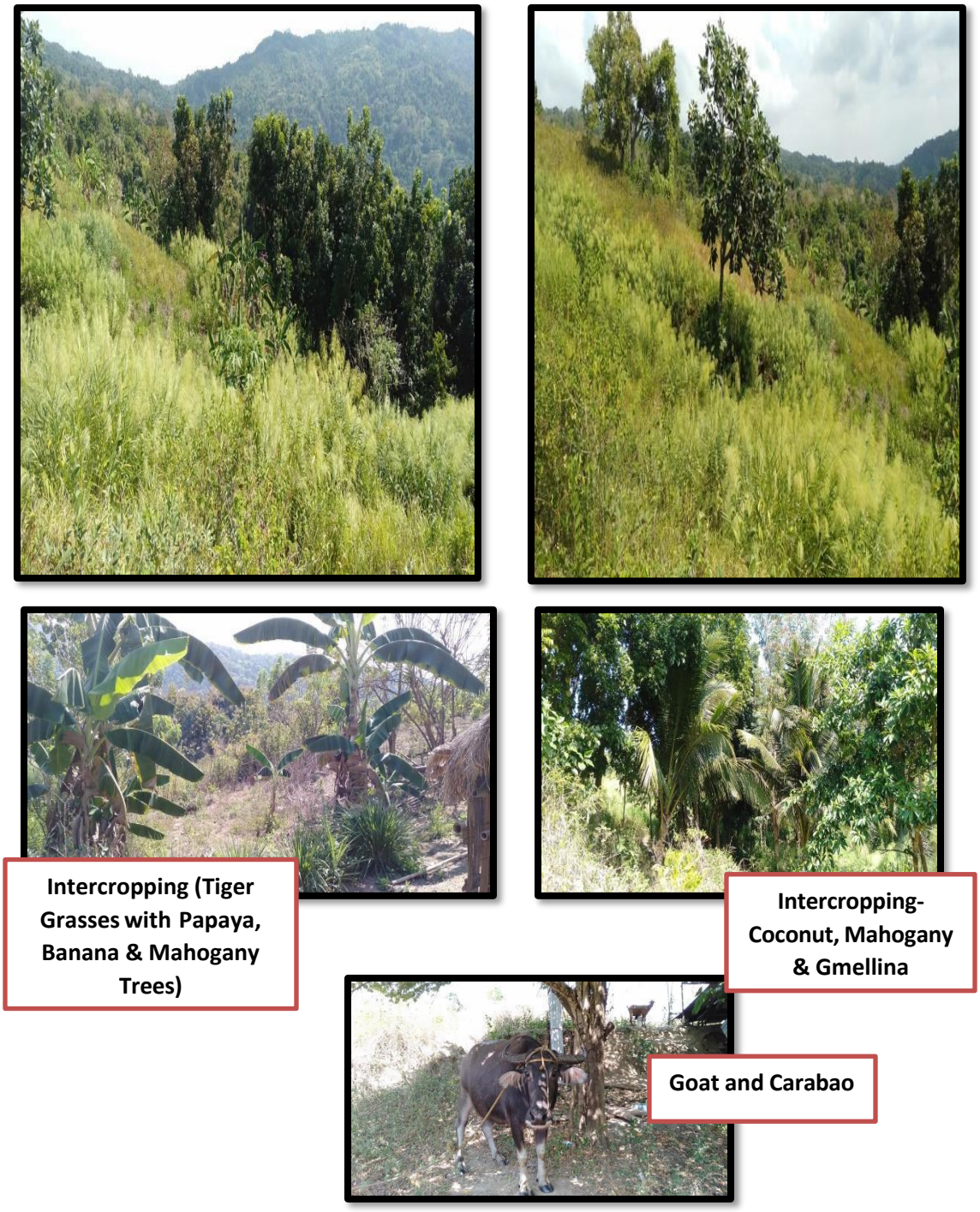


Plate 6. Soil and Water Conservation Practices in Barangay Lacong, San Gabriel, La Union



Plate 7. Multiple Cropping in Barangay Casilagan, Naguilian, La Union



Plate 8. Multiple cropping (Cacao-Guyabano-Coffee-Papaya and Banana) in Lacong, San Gabriel, La Union

Both male and female respondents recorded fairly participation in mulching. The very highly participation of the respondents in the adopted soil and water conservation practices is due to the rolling and steepy features of the watershed location in the community especially in Casilagan, Naguilian and Lacong, San Gabriel, La Union. Hence, the residents especially the barangay officials in Casilagan, Naguilian, La Union were very conscious in protecting their forest areas because of its vulnerability to landslide and erosion. The seedlings planted and grown in barangay Casilagan, Naguilian, La Union were provided by DMMMSU-NLUC, Bacnotan, La Union (Plate 9).



Plate 9. Seedlings Planted during the Reforestation Activity within the Watershed Area in Barangay Casilagan, Naguilian, La Union

Farming as an occupation is dominated by males. However, Abeka, et al (2008) have shown that women were the ones who have led their households and communities in the development of agriculture coping strategies including food preservation, mixed cropping, water harvesting and irrigation, growing reliance on wild fruits and forest products.

In the study for coping strategies and perceptions of farmers on the roles of trees in climate change mitigation and adaptation in the upland barangays of Bacnotan, La Union, Fontanilla (2016), found out that fruit and forest trees with other crops, vegetable and livestock are already practiced by farmers and adopted integrated farming and agroforestry. Upland farmers in Bacnotan, La Union had adopted coping strategies such as diversified farming/cropping, planting of drought resistant crops, soil and water conservation methods, improved post-harvest technology, mulching, and improved irrigation system.

Onyekale and Madukwe (2010) explored the adaptation measures by crop farmers in the Southeast rainforest zone of Nigeria to climate change and revealed that portfolio diversification was the most used method as reported by 20% farmers. This strategy involves the use of improved crop varieties, intercropping and using different crop varieties that survive in adverse conditions. Other strategies used by farmers include the use of soil and conservation technologies (15%), changing planting dates (11.7%) and planting of trees. Makondo (2018) gave some indigenous adaptation strategies to climate variability by farmers, such include; fall back on previous harvest, rain water harvesting, diversification of livelihood and use of forecasts to prevent responding false start of rains.

Support/ Assistance Provided by the Government and other Agencies

The overall purpose of development assistance is to improve the livelihoods of citizens in recipient countries, especially the impoverished. Poverty reduction is internationally recognized as an important assistance issue component for poverty reduction. Support services come in many forms which are necessary in facilitating the process of agricultural development (DA, 1989). The effective delivery of basic social services and poverty-related programs at the local level will improve poverty reduction programs.

The support/assistance provided by the partners and other agencies is presented in Table 5. DMMMSU- NLUC, specifically the College of Agroforestry and Forestry provided technical assistance for upland farming and training on nursery management and plantation establishment at barangay Arosip, Bacnotan, La Union. On the other hand, DMMMSU-NLUC also provided seedlings to barangay Casilagan, Naguilian which were planted within the watershed area. Barangay Lacong was also provided with technical assistance in the adoption of soil and water conservation practices. San Gabriel, La Union is also a recipient of the La Union Agroforestry Upland Development Project (LUAUDP). Agroforestry technology and various soil and water conservation practices were being introduced to them which are still sustainable and being practiced by the residents up to these days because of its benefits and advantages it provided them.

Table 5. Support/ Assistance Provided by the Government and other Agencies

Support Providers	Support/Assistance Provided
A. DMMMSU	a. Planting Materials b. Financial Assistance c. Trainings/Seminars d. Technical Assistance e. IEC Materials
B. Other Partners	
• DA	a. Planting Materials b. Fertilizer c. Trainings/Seminars d. Technical Assistance e. Machineries
• DENR	f. Planting Materials g. Trainings/Seminars h. Technical Assistance
• DOST	i. Machineries j. Trainings/Seminars k. Technical Assistance
• LGU	l. Fund/ Financial assistance
• Lorma College	m. Planting Materials

Aside from DMMMSU-NLUC, there are other assistance given to the recipients of the projects. Planting materials such as cacao seedlings were given by Lorma College to barangay Arosip, Bacnotan. Fertilizers were also given to them by the Department of Agriculture and trainings provided by DA and DOST.

Casilagan, Naguilian, La Union was observed to have an advantage for a continuous support from Department of Environment and Natural Resources. DENR is an agency concern in the protection of natural resources especially on women and indigenous peoples living in highly fragile and vulnerable ecosystems, coastal fishers and other poor smallholders and landless people. Since barangay Casilagan is located in a steepy area, DENR continued their financial and technical assistance in order to help the residents to sustainably manage and protect their watershed areas.

The Department of Science and Technology also continuously assisted residents in barangay Lacong, San Gabriel by providing them machineries of which included an egg sorter which was eventually entrusted to their cooperative.

Problems Encountered by the Respondents

This study is not only limited in collecting information on gender participation in the various activities with regards to sustainable management of resources within upland agroforests but likewise has end purpose of gathering information on the potential problems encountered by the recipients (both men and women) to be appropriately addressed.

Table 6 presents the degree of seriousness of the problems encountered by the respondents. Results showed that irregular commitment and insufficient knowledge about the sustainable management of resources were considered fairly serious by both men and women respondents while inadequate support was not serious for the men and fairly serious for the women. On the gender participation in discussion and planning session, women rated it as fairly serious while not serious for the men.

The trending and most controversial global issue and concern of today by government, non-government intuitions, administrators, program implementers, and development practitioners is gender. Since Boserup's assertion that development affects both men and women differently. His effort had served as an "eye opener" that gathered the interest among scholars, and policy makers. From then, various approaches were designed to address this issue. Some of which include Women in Development (WID) that shifted into Women and Development (WAD) and finally Gender And Development (GAD), all of which focus on the gender issues.

Table 6. Degree of Seriousness of Problems Encountered by the Respondents

Problems	Men		Women	
	Numerical Rating	Descriptive Rating	Numerical Rating	Descriptive Rating
A. Farmers Problem				
1. Irregular Commitment of members	1.96	Fairly Serious	1.89	Fairly Serious
2. Insufficient knowledge about the project	2.35	Fairly Serious	2.17	Fairly Serious
B. Partner/Service Providers				
1. Irregular monitoring and evaluation of the project	1.99	Fairly Serious	2.01	Fairly Serious

2. Inadequate support from partners	1.73	Not Serious	1.83	Fairly Serious
C. Gender Participation				
1. Participation of women in discussion and planning sessions	1.71	Not Serious	1.81	Fairly Serious

From the results of this study, it points out that the most or the highly serious problem rest on the insufficient knowledge of women regarding the nature of the project, although not fairly serious as observed by male respondents.

Gender issue particularly on the participation of women and men in the various development endeavors as well as their roles in the community appeared to be not serious or fairly serious which seems to indicate that both men and women engaged in the project do not consider gender participation as a potential problem. Regardless who does the job, whose roles/responsible, what and why do not affect their performance as manifested in their participation in the various project activities.

Irregular commitment of members maybe due to land ownership. Most of the respondents were only tenants or leaseholders to the land they are tilling so it could be a contributory factor to that problem. The respondents have insufficient knowledge about the program because the original partners of CAFF DMMMSU-NLUC projects before were already old, hence they have entrusted farm cultivation activities to their nearest keens or children. Despite of their children's unawareness of the origin/provider of the technologies, it did not hinder their interest in sustaining the adoption practices.

Since the duration of the memorandum of agreement between DMMMSU-NLUC and barangay Lacong, San Gabriel and Casilagan, Naguilian, La Union had already terminated, the projects were not regularly visited/monitored.

The inadequate support from partners and participation of women in discussion, planning sessions were rated fairly serious by women but not serious to men. In Nigeria, women in agriculture approach considered women activities to increase their level of participation in decision making and natural resource management (Quisumbing et al., 2014).

The absence of a strong internal project monitoring system often cannot be effectively evaluated. Project monitoring and evaluation are very crucial elements of project management. It aims to determine the relevance and fulfillment of objectives, development efficiency, effectiveness, impact and sustainability. Monitoring is a regular process that systematically collects data on specified indicators to provide management

and the main stakeholders of an ongoing development intervention with indications of the extent of progress and achievement of objectives. Taken literally, this is a demanding. From then, project monitoring and evaluation are now a routine part of project appraisal. In the early 1980s, several international agricultural development agencies recognized the problems in formulating effective agricultural monitoring and evaluation (World Bank, 2010).

Summary

The study was conducted to determine the status of gender participation in the sustainable management of resources within upland agroforests in La Union, Philippines from February 25 to May 25, 2020 with the following specific objectives: 1) to determine the socio-demographic profile of respondents; 2) gender participation on the different activities of the sustainable management of resources within upland agroforests; 3) gender participation on the adopted soil and water conservation practices; 4) support/assistance provided by the government and other agencies; and 5) problems encountered by the respondents of the project.

The salient findings of the study were the following:

A great majority (94 or 64.83%) of the respondents were males while many (51 or 35.17%) were females. Many (48 or 33.10%) of the respondents belonged to the age bracket 41-50 years and a great majority (104 or 71.72%) were married.

Many of the respondents were elementary (56 or 36.62%) and high school (53 or 36.55%) graduates, few obtained vocational courses (22 or 15.17%), and 14 or 9.66% were college graduates.

A great majority of the project respondents (88 or 60.69%) were leaseholders or tenants while the remaining 57 or 39.31% were owner operators.

Majority of the respondents (81 or 56.86%) have 9 years and above farming experience. Almost half of the respondents (67 or 46.21%) have 1.5 hectares farm land area, many (60 or 41.38%) have one hectare and below and few (18 or 12.41%) have 11 hectares and above. Many (56 or 38.62%) of the respondents earn an income of Php. 3,001 to Php. 5,000 and few (14 or 9.66%) earn an income of Php. 9, 0001 and above.

As to the other jobs/occupation that the respondents are engaged many (59 or 40.69%) are laborers, 33 or 22.76% are store owners or engaged in buying and selling of goods, 21 or 14.48% are government workers or officials, 9 or 6.21% are carpenters, few (8 or 5.52%) are caretakers and OFW's and 7 or 4.83% are jeepney drivers.

On the distance of their households to their farms, many (57 or 39.31%) have 501 meters to 1 kilometer distance. Some (44 or 30.34%) have 500 meters to 1 kilometer, few (30 or 20.69%) have 1.1 to 2 kilometers, 14 or 9.66% have a distance of 2.1 kilometers and

above. The 2.1 kilometers and above distance recorded the least percentage since the areas were already situated in the upland.

On their attendance in meetings, men respondents have very highly participation (4.43) while female respondents have highly participation (3.84). During discussions, men have highly participation (4.09) while the women have moderate participation (3.26). In financial management, men have moderate participation (3.31) and the women recorded very highly participation (4.1).

Male respondents have very highly participation in planting (4.21) and replanting (4.06), highly participation in weeding/clearing (3.70), hole digging (3.54), and watering (3.7), while fertilizing activity is moderately participated by men (2.97). Meanwhile, female respondents have highly participation to planting (3.68), moderately participation in weeding/clearing (3.0), watering (3.09), and replanting (3.24). Hole digging (2.59) and fertilizing (2.16) activities were fairly participated by women.

Male respondents have very high participation on agroforestry practice (5.0), alley cropping (3.46), multiple cropping (4.29), terracing (4.57), establishment of water harvester (4.67) , reforestation and afforestation(4.76) and establishment of diversion canals (4.77), mulching is fairly participated (2.39) by men. On the other hand, women respondents have very highly participation to agroforestry practice (4.61), alley cropping (3.04), multiple cropping (4.45) and reforestation/afforestation (4.92). Mulching is fairly participated.

Aside from DMMMSU-NLUC, other agencies that extended their assistance to the beneficiaries or recipients of the project include DA, DOST, Lorma Colleges, and LGU.

Problems encountered by the respondents (both men and women) in the implementation of the CAFF upland development extension projects were: irregular commitment of members and insufficient knowledge about the project are considered fairly serious. This irregular monitoring and evaluation of the project and inadequate support by the partners/service providers are considered fairly serious by both men and women. On the gender participation, insufficient perceptions on the roles of women in the community are not serious however, the participation of women in discussion and planning sessions are fairly serious.

Conclusions

Based on the results of the study the following conclusions were deduced:

1. A great majority of the respondents are males and married. Many belong to ages 41-50 years old. In terms of educational attainment, many of the respondents are elementary and high school graduates. A great majority of the respondents are leaseholders and tenants, have 1-5 hectares farm lots and mostly with a monthly income of Php. 3,001-5,000.00. Many of the respondents have 501 meters to one kilometer distance from their

households to the farm. Distances of 2.1 kilometers and above have the least percentage since the areas were already in the upland, thus their farms are mostly situated within the vicinity of their homes.

2. Both men and women from the three study sites have moderate to very highly participation on the different activities of the project such as attendance to meetings, discussions, financial management and planning/decision making; and on site preparation, maintenance and protection activities such as weeding, hole digging, planting, watering, fertilizing and replanting.
3. There is very highly participation of both men and women on the adopted soil and water conse
rvation such as agroforestry practice, alley cropping, multiple cropping, establishment of water harvester, reforestation/afforestation and establishment of diversion canals. Mulching was fairly adopted while construction of fire lines was not adopted.

4. Planting materials, technical, financial, trainings/seminars and IEC materials were the support assistance provided by DMMMSU and other partner agencies (DENR, DA, DOST, LGU and Lorma College).

5. The fairly serious problems encountered by both men and women respondents from the study sites in the implementation of CAFF, DMMMSU-NLUC upland development extension projects were irregular commitment of members, insufficient knowledge about the project. For the partners/service providers, irregular monitoring and evaluation of the project by the implementers and inadequate support were considered fairly serious. Participation of women in discussion and planning sessions was rated fairly serious for the women.

Recommendations

Given the above mentioned conclusions, the following are recommended:

1. There must be a harmonious coordination among the respondents and implementers to increase their awareness on the beneficiaries' problems and needs to be addressed;

2. Project implementers must clearly discuss the nature/overview of the projects, goals and objectives, the benefits they get from the projects as well as its advantages to the improvement, conservation, protection leading to a sustainable natural resources and watersheds;

3. Relevant trainings and seminars must be conducted to equip them on the appropriate management and protection of the established projects;

4. Regular monitoring and evaluation of the project activities must be observed to ensure its smooth operation that would consequently lead to the attainment of the project goals and objectives;

5. To institute an approach or strategy to encourage the active participation of both men and women in the community in all the activities in the designed project to be established.

6. To conduct a seminar focused on the following; gender participation/roles of men and women, and gender equality in all development endeavors (projects programs) and the like.

Compliance with Ethical Standards

As the author of this research project, I affirm that the following ethical standards have been diligently observed throughout this study. Firstly, before their participation, all respondents were provided with comprehensive information regarding the purpose, procedures, and potential risks and benefits of the research, ensuring their informed consent. It was made explicitly clear that participants had the freedom to withdraw from the study at any point without consequence. Moreover, strict measures were implemented to maintain the anonymity of all respondents, ensuring their confidentiality and privacy were upheld throughout the research process. Furthermore, the well-being of respondents was of paramount importance, and steps were taken to safeguard their physical and psychological welfare. Any potential risks to participants were carefully assessed and mitigated to the best of our ability. Additionally, I declare that no conflict of interest exists in the conduct of this study. The research was carried out with integrity and objectivity, devoid of any bias or influence from personal, financial, or professional affiliations. Moreover, plagiarism in any form was strictly avoided, and all sources of information were appropriately cited and attributed following academic standards. Every effort was made to ensure the originality and authenticity of the research findings. Furthermore, the interpretation of the findings was conducted without bias, and rigorous analysis was undertaken to present an accurate representation of the results. Lastly, I confirm that the results of this study are intended solely for research purposes and will be utilized to contribute to the academic understanding of the subject matter. The findings will not be used for any other purpose beyond scholarly inquiry and advancement.

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Consult not your fears but your hopes and your dreams. Think not about your frustrations, but about your unfulfilled potential. Concern yourself not with what you tried and failed in, but with what it is still possible for you to do.- Pope John XXIII

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LMW

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APPENDIX
(The Research Instrument)

GENDER PARTICIPATION IN THE SUSTAINABLE MANAGEMENT OF RESOURCES WITHIN UPLAND AGROFORESTS IN LA UNION, PHILIPPINES

Direction: Please answer the following items to the best of your knowledge by writing the information requested on the space provided for. Rest assured that your answer would be treated confidential.

I. Socio-demographic Profile of the Respondents

Name of respondents: _____
Address: _____

A. Age

___21-30
___31-40
___41-50
___51-60
___61 years and above

B. Gender

____Male
____Female

C. Civil Status:

____Single
____Married
____Widower

D. Educational Attainment:

____Elementary Graduate
____High School Graduate
____Vocational Graduate
____College Graduate
____Others

E. Tenure of Land

____Owner Operator
____Leaseholder/Tenant

F. Number of Year/s in Farming

____5 years and below
____6 years to 8 years
_____9 years and above

G. Land Area Cultivation (in hectares)

____below 1 ha.

____1-5 has.
____6-10has.
____11has. and above

H. Monthly income
____P3,000 and below
____P3,001-P5,000
____P5,001-P7,000
____P7,001-P9,000
____P9,001 and above

I. Occupation aside from farming:
____Laborer
____Painter
____Caretaker
____Government Worker/Official
____Others, pls. Specify
_____Carpentry
_____Store owner
_____Housekeeper
_____Driver

J. Distance of the House to the Farm
____500 meters and below
____501 meters to 1 kilometer
____1.1 kilometer to 2 kilometers
____2.1 kilometers and above

II. Gender Participation in the Project Management, Site Preparation, and Maintenance and Protection Activities within Upland Agroforests

Direction: Please check (/) the appropriate number or letter that reflects the extent of your involvement in various activities. Be guided with the following scale:

5- Very Highly Participated 4- Highly Participated 3- Moderately Participated 2- Fairly Participated 1- Not Participated

A. Project Management Activities						**Gender**	
	5	**4**	**3**	**2**	**1**	**Male**	**Female**
A. Conduct of meetings							
B. Discussions							
C. Financial management							
D. Planning Sessions							

B. Site Preparation and Maintenance and Protection						Gender	
	5	4	3	2	1	Male	Female
A. Weeding/Clearing							
B. Hole Digging							
C. Planting							
D. Watering							
E. Fertilizing							
F. Replanting							

Part III. Gender Participation in the Adopted Soil and Water Conservation Practices

Soil and Water Conservation Practices						Gender	
	5	4	3	2	1	Male	Female
A. Agroforestry							
B. Alley cropping							
C. Mulching							
D. Multiple Cropping							
E. Terracing							
F. Reforestation/Afforestation							
G. Establishment of Water Harvester							
H. Establishment of Controls (checkdam, diversion canals etc.)							
I. Mulching							
J. Others (pls. specify)							

IV. Support/Assistance Provided to the Respondents by the Government and Other Agencies

Items Provided	Sponsoring Agencies
planting materials	
fertilizers	
machineries	
funding /financial assistance	
trainings /seminars	
Technical assistance	
others, please specify	

V. Problems encountered by the respondents

Direction: Please check them according to the seriousness of problems you have encountered.

5 Very Highly Serious; **4** Highly Serious **3** Moderately Serious;
2 Highly Serious; and **1** Not serious

Problems encountered	5	4	3	2	1	Male	Female
A. Farmers Problem							
Irregular commitment of members							
Insufficient knowledge about the program							
Others, please specify							
B. Partners/Service Providers	**5**	**4**	**3**	**2**	**1**	**Male**	**Female**
Irregular Monitoring and Evaluation of the project							
Inadequate support							
Others, please specify							
C. Gender Participation	**5**	**4**	**3**	**2**	**1**	**Male**	**Female**
Insufficient perception on the roles of women in the community							
Participation of women in discussion, planning sessions							
Others, please specify							

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GREEN PRICING PRACTICES OF SELECTED RESTAURANTS IN QUEZON CITY

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ABSTRACT

The price is what a client must pay to get a product. Many factors, including the cost of the goods, product distinctiveness, competition, and the customer's perception of the product's value, affect a product's price. This research aimed to identify green pricing practices in restaurants. The study applied a mixed method and descriptive method approach with survey questionnaires and interviews. The study used purposive sampling. To collect the data, a survey questionnaire and interview are used, and it's categorized into three parts, with (80) respondents that consist of managers, employees, and customers of selected restaurants in Quezon City. The restaurants are adopting green pricing practices to reduce food and packaging waste and invest in reusable and compostable materials. These strategies differentiate products and cater to changing consumer preferences. The restaurant's commitment to eco-friendly initiatives not only benefits the environment but also enhances menu offerings, appealing to eco-conscious consumers. The perceived value of the product significantly impacts customer satisfaction and propensity to make green purchases. Challenges faced include sourcing sustainable ingredients, investing in eco-friendly packaging, and staff awareness. To overcome these, the restaurants negotiate better terms, invest in compostable packaging, promote green practices through social media, and adjust menu offerings and portions.

Keywords: *Green Pricing, Cost of Product, Product Differentiation, Competition, Customer's Perceived Value of a Product*

INTRODUCTION

As restaurants face rising consumer awareness, stronger regulation, and expanding shareholder demands aimed at maintaining the balance of nature, "green" concerns have grown more important for business decisions (Nguyen-Viet, 2022). Moreover, green restaurants develop as a reaction to the food-service industry's environmental issues, as customers and manufacturers grow more conscious of the implications of food manufacturing on the environment. Green restaurants use ecologically sustainable develops, structures, and operations (Nicolau et al., 2020). Therefore, green practices have been scientifically shown to improve consumers' emotional attachment, contentment, and behaviors that are influencing their desire to purchase and shell out more for green products (Zhang et al., 2021). In addition, collecting and the process of composting as well as energy and water management procedures and the usage of natural foods and materials, have been demonstrated to significantly affect consumer desire to purchase environmentally friendly goods and emotional attachment (Mai et al., 2023). According to the Journal of Economics and Business (JEB) 2023, green pricing practices in the food service sector have been empirically demonstrated to have a substantial influence on consumer intention to purchase and desire to consume green products.

According to Kaur, B. et al., (2022) the term "green price" refers to the setting of prices for environmentally friendly products that may be more expensive than those of conventional non-green products because higher-quality raw materials are used, chemicals and other toxic substances are substituted, and production costs are increased as a result of tighter regulations. Researchers who work with green goods typically use the phrase "premium price" since producing, using, and disposing of green products comes with additional costs, which drive up the cost of production relative to standard non-green products. Furthermore, the implementation of environmental policy measures raises manufacturing costs, which in turn raises the selling price of eco-friendly products. Because green products include eco-friendly properties, consumers.

In developed European nations who support the environment are ready to pay a premium price for them. A product's premium pricing is often seen as an indicator of its superior quality and environmentally friendly attributes. Furthermore, A crucial component of the marketing mix is the green price. If new items are perceived as valuable, the majority of buyers are willing to pay a higher price. Performance, functionality, design, visual appeal, and taste may all be enhanced by this value. The environmental advantages are typically an extra bonus, but they frequently make the difference when comparing the value and caliber of a product with that of a rival. The cost of environmentally friendly products is largely covered by the additional expenses that customers must bear as a result of their superior quality (Yusiana, R. et al,. 2019).

Green pricing is a method of setting prices that considers how a good or service will affect the environment. It displays a dedication to sustainability and openness to draw in customers who give environmental conscience top priority when making judgments about what to buy. Green pricing incorporates branding and marketing strategies in

addition to environmental responsibility. Encouraging pricing strategies that prioritize sustainability can draw in an increasing number of environmentally conscientious customers. In addition to helping companies lower their carbon footprint, eco-friendly pricing is a potent marketing tactic. Companies can appeal to environmentally concerned consumers and help create a greener, more sustainable future by developing offset programs, adopting carbon-neutral pricing, and successfully promoting sustainability-focused pricing. The business may lead the green e-commerce revolution if it adopts environmentally friendly pricing. Green pricing is not only a decision in a more eco-aware society, but it is also essential to the long-term viability of enterprises. (Kotomaki, E, 2023). According to Duke and Ateibueri (2022), the underlying idea of green pricing revolves around the price levels that customers are ready to pay to obtain green products and services. A green pricing initiative's performance is determined by a variety of elements. Consumer involvement is critical in the development of an effective strategy; customers must demonstrate their involvement in the idea as well as their readiness to shell out for environmentally more effective utilities. It is important to note that people's comprehension and ability to accept green pricing will vary depending on their financial status and usage; company customers have to be educated that green pricing may benefit their businesses, and others may find it ineffective.

This research aimed to identify green pricing practices in restaurants. While research exists regarding green pricing in restaurants, to overcome the perception-reality gap and advance more in-depth green pricing practices throughout the industry, it underlined how important it is to align marketing messaging with specific sustainable activities. Additionally, it established the significance of green pricing practices in each restaurant in the area. By offering insights into the complexity of green pricing practices, particularly in the setting of Quezon City, this research added to the body of existing literature. The findings of the study can help restaurant establishments learn about green pricing, which will help create knowledge and challenges about green pricing in restaurants in Quezon City and beyond.

By addressing these issues, this research intended to offer food establishments information and suggestions for green pricing practices.

The purpose of the study was to ascertain Quezon City restaurants' green pricing policies.

It specifically aimed to respond to the following questions:

1. What are the green pricing practices of restaurants in terms of:
   1.1. Cost of Product
   1.2. Product Differentiations
   1.3. Competition
   1.4. Customer’s Perceived Value of Product
2. What challenges do restaurants are facing in implementing and maintaining green pricing practices? How are restaurants responding to these challenges?

METHODOLOGY

The research design used in the study to evaluate the green pricing policies of particular Quezon City restaurants is the descriptive method of research. Descriptive research methods are employed by researchers to obtain knowledge about a certain population or issue. The research also employs a mixed method design, which is a simple approach in which the primary and auxiliary elements come from the same paradigm and can be either qualitative or quantitative. This study offers a thorough and precise understanding of a certain population or the traits and actions of the participants. Descriptive research offers valuable insights that may stimulate further study by gathering and analyzing data on a certain topic. It also aids in the comprehension of the topic by scholars. This approach can be helpful when examining anthropological circumstances where an intuitive approach to meaning finding can be beneficial. The respondents of this study were composed of (2) Managers, (10) employee, and (68) customers of two selected restaurants in Quezon City with a total of 80 respondents. (70) respondent for quantitative questions and (10) respondent for qualitative question. Before the instrument was used in the study, a survey questionnaire was divided into three parts in the order of Part I, the respondent demographic profile is examined to assess the participant's qualifications. The evaluation of the restaurants' green pricing policies is covered in Part II. Five-point Likert scales were employed by the researchers to assess green pricing methods. A 5-point Likert scale, ranging from 1 (not practiced) to 5 (very practiced), will be used to answer the questions. Part III is about the challenges encountered by two selected restaurants in Quezon City in implementing green pricing practices, and it follows the questions about how they address these challenges. The question in Part III will be answered in open-ended writing in order to obtain insights into the challenges met by the restaurants in the implementation of their green pricing practices.

The data gathered from the survey questions will be totalled, noted, and analysed by the researchers. To accurately evaluate the findings of the data analysis and their applicability to the primary goal of the research, the frequency and percentage will also be computed, along with the overall results and final rankings of the criteria contained in the survey questionnaires. The statistical techniques utilized for data interpretation are percentage, frequency, weighted mean, ranking, and likert scale.

Percentage In the respondent profile, a percentage is utilized to ascertain how one component relates to the entire.

Formula: $P = \frac{f \times 100}{N}$

Where:

f = frequency
N = Number of cases
P = Percentage

Frequency. is the actual response that a respondent makes to a particular item or question on the questionnaire where options are presented.

Weighted Mean. Its purpose is to combine a series of scores. It's the average that's been calculated by assigning different weights to various individual variables.

Formula: $WM = \sum \frac{(W1f1 + W2f2...+wnfn)}{N}$

Where:

WM = weighted mean

f1 = frequency of first cell

w1 = weight of first cell

f2 = frequency of second cell

w2 = weight of second cell

n = number of cases

Ranking. is employed to ascertain the order of variables with increasing and decreasing magnitude. Rank has the highest frequency, with one being the highest and decreasing to the final number.

Likert Scale. The Five (5) Likert Scale Method was employed as the criterion for data interpretation.

The idea of number limitation will be employed as follows:

Scale	Range	Verbal Interpretation	Symbol
5	4.2 – 5.00	Highly Practiced	HP
4	3.3 – 4.19	Practiced	P
3	2.6 – 3.39	Moderately Practiced	MP
2	1.8 – 2.59	Least Practiced	LP
1	1.0 – 1.79	Not Practiced	NP

RESULTS AND DISCUSSION

Sub Problem No. 1 Green Pricing Practices of Restaurant

Table 1
Assessment on Green Pricing Practices of Restaurant in terms of Cost of Product

Cost of Product	Mean	Interpretation	Rank
1. The restaurant's menu design spans a variety of dishes.	4.45	Highly Practiced	4
2. The Restaurant implements strict portion control measures to ensure customers get the right amount of food.	4.46	Highly Practiced	3
3. The restaurant implements a waste reduction program to minimize food and packaging waste.	4.58	Highly Practiced	1
4. The restaurant adopts reducing meat consumption and they are incorporating more plant-based options to cut down on high costs.	3.9	Practiced	5
5. The restaurant is investing in reusable or compostable serving materials to reduce disposable packaging expenses.	4.51	Highly Practiced	2
General Weighted Mean	**4.38**	**Highly Practiced**	

Table 1 showed that all five (5) indicators under the cost of product had a grand mean of 4.38 (highly practiced), which comes from the variety of dishes (4.45, highly practiced), implementation of strict portion control measures (4.46, highly practiced), implementation of food and packaging waste reduction (4.48, highly practiced), using more plant-based options to lower the price (3.9, practiced), and investing in reusable serving material (4.51, highly practiced).

The results have shown that the two restaurants with green pricing practices in terms of the cost of the product are using a policy or program to reduce food and packaging waste and investing in reusable and compostable serving material. From this,

a conclusion can be drawn that using an eco-friendly product will cause an expensive price that is reasonable for the customers to buy from the restaurant. Relative to the findings from the Journal of Economics and Business (2023), green materials may be expensive in the restaurant sector. Several green practices, including composting and recycling, sustainable energy and water management, and the procurement of naturally produced food-green goods and materials, have a favorable influence on consumer interest in purchasing green products.

Table 2

Assessment on Green Pricing Practices of Restaurant in terms of Product Differentiation.

Product Differentiation	Mean	Interpretation	Rank
1. The restaurant is offering a unique tasting menu featuring seasonal and sustainable dishes.	4.38	Highly Practiced	1
2. The restaurant is launching plant-based or vegan menus to cater to environmentally conscious diners.	4.03	Practiced	5
3. The restaurant is committed in showcasing sustainability through eco-themed decor.	4.35	Highly Practiced	2
4. The restaurant created a “farm-to-table” menu that highlights locally sourced ingredients.	4.23	Highly Practiced	4
5. The restaurant is offering a “green dining experience” package including a tour of the restaurant.	4.26	Highly Practiced	3
General Weighted Mean	**4.25**	**Highly Practiced**	

Table 2 showed that all five (5) questions under the product differentiation variable had a grand total mean of 4.25, indicating that most of the techniques are highly practiced and have an average mean greater than 4.20. Meanwhile, the plant-based or vegan menu for environmentally conscious diners obtained an average mean of 4.03, which falls under the practiced level. This clearly shows that recognizing and carrying out strategies in

relation to product differentiation in green pricing provides a competitive advantage in the field of green consumption.

The results showed that by providing distinctive products that adapt to changing consumer demands, green pricing techniques help differentiate products. But the number of competing items in the restaurant sector has increased significantly, raising the possibility that a product may become lost in the crowd and never find enough traction to thrive. According to ProductPlan (2023), companies use the strategy of "product differentiation" to distinguish one good or service from similar ones that are available in the market. Businesses aim to gain a competitive edge by using compelling, unique selling propositions (USPs) to set their product apart from competitors.

Table 3

Assessment on Green Pricing Practices of Restaurant in terms of Competition

Competition	Mean	Interpretation	Rank
1. The restaurant is actively engaging with environmental organizations to support conservation initiatives	4.29	Highly Practiced	3
2. The restaurant is committed to zero-waste practices, setting an example for competitors.	4.45	Highly Practiced	1
3. The restaurant is updated with the latest sustainable trends, and they incorporate them into the menu.	4.31	Highly Practiced	2
4. The restaurant shares its sustainability journey through social media and marketing campaigns.	4.18	Practiced	5
5. The restaurant is sourcing from unique suppliers that specialize in sustainable or rare ingredients.	4.28	Highly Practiced	4
General Weighted Mean	**4.3**	**Highly Practiced**	

Based on the findings from Table 3, the restaurant under study is highly committed to practicing green and sustainable initiatives. The data shows that the restaurant actively engages with environmental organizations to support conservation efforts, scores high in commitment to zero-waste practices, and stays updated with the latest sustainable trends, incorporating them into their menu offerings. Additionally, the restaurant shares its sustainability journey through social media and marketing campaigns, further emphasizing its dedication to environmental responsibility. Moreover, the restaurant demonstrates a commitment to sourcing from unique suppliers specializing in sustainable or rare ingredients. Overall, the grand mean score of 4.3 indicates that the restaurant is highly practiced in its green practices, setting a commendable example for its competitors.

The results indicate that the restaurant is highly dedicated to implementing eco-friendly initiatives within its operations, this partnership showcases the restaurant's commitment to supporting environmental causes and making a positive impact on the community. These findings suggest that restaurants are not only focused on profit but also value sustainability and environmental stewardship. Not only does this benefit the environment but it enhances the menu offerings, making them appealing to eco-conscious consumers. The outcomes highlight the importance of the business aligning with green initiatives for the betterment of the environment. In order to stay competitive, restaurant operations can adopt responsible steps such as implementing recycling policies and preemptive measures to reduce food loss and waste generation. In summary, this work suggests that there is room for regulators and legislators to support hospitality professionals in adopting circular economy strategies and to provide them with financial incentives to reduce food waste in the context of commercial competitiveness. (Mark 2021).

Table 4

Assessment on Green Pricing Practices of Restaurant in terms of Customer's Perceived Value of Product

Customer's Perceived Value of Product	Mean	Interpretation	Rank
1. The restaurant conducts a regular sustainability survey to collect thoughts and show responsiveness to customer concerns.	4.25	Highly Practiced	2
2. The restaurant is sharing stories and experiences of the restaurant's	4.15	Practiced	5

sustainability through newsletters and blogs.			
3. The restaurant is highlighting customer feedback on sustainable practices through social media and testimonials.	4.23	Highly Practiced	3
4. The restaurant provides educational materials on sustainability and sourcing practices.	4.22	Highly Practiced	4
5. The restaurant clearly communicates its sustainability efforts on its menu.	4.28	Highly Practiced	1
General Weighted Mean	**4.23**	**Highly Practiced**	**4.23**

Table 4 shows that the customer's perceived value of product had a total grand mean 4.23, which can be interpreted as (Highly Practiced). As the researchers testified, the restaurant conducts a regular sustainability survey to collect thoughts and show responsiveness to customer concerns (4.25, Highly Practiced), it shares stories of the restaurants sustainability through newsletters and blogs (4.15, Practiced), and it highlights customer feedback on sustainable practices through social media and testimonials (4.23, Highly Practiced), they provide educational materials on sustainability and sourcing practices (4.22, Highly Practiced), and lastly restaurants communicates its sustainability efforts on its menu (4.23, Highly Practiced).

The findings revealed the green pricing practices of the restaurants in terms of customers' perceived value of the product will contribute to the marketing provided based on the wants and expectations that are environmentally conscious. It is used to maintain long-term relationships with the customers. It is possible to conclude that a customer's perceived value significantly impacts their satisfaction level and their propensity to make green purchases. Relative to the findings of Juliana (2020), Customers' evaluation of a market offering's overall value is based on their requirements and expectations; ecologically sustainable needs and expectations are referred to as "green perceived value." Green perceived value is seen as a crucial element in sustaining long-term customer relationships. It also has a significant impact on customer satisfaction and green purchase intentions.

Table 5

Summary Assessment on Green Pricing Practices of Restaurant in terms of the Four (4) Variables in SOP no. 1

Green Practices SOP Variables	Weighted Mean	Interpretation	Rank
1. Cost of Product	4.38	Highly Practiced	1
2. Product Differentiation	4.25	Highly Practiced	3
3. Competition	4.3	Highly Practiced	2
4. Customer's Perceived Value of Product	4.23	Highly Practiced	4
General Weighted Mean	**4.29**	**Highly Practiced**	

Table 5 shows that the green pricing practices had a general weighted mean of 4.29 which is interpreted as high practice in implementing green pricing practices. The cost of the product has a weighted mean of 4.38 (highly practiced), followed by the product differentiation which has a weighted mean of 4.25 (highly practiced), competition has a weighted mean of 4.3 (highly practiced, and lastly the customer's perceived value of product which has a weighted of 4.23 (highly practiced).

Sub Problem No. 2 Challenges of the restaurants in implementing and maintaining green pricing practices? How are restaurants responding to these challenges?

Table 6

Challenges

Challenges	Responding to the Challenges	Response
Sourcing sustainable ingredients	• *Supplier Assessment* • *Negotiate better terms* • *Build long lasting relationship with suppliers* • *Diversified ingredient sourcing* • *Menu engineering strategies* • *Adapting flexible menu that prioritize locally ingredients*	R1, R2, R3, R4, R6, R10

	• *Adjusting price*	
Eco-friendly packaging	• *Compostable containers* • *Recyclable material* • *Encouraging customers to opt for dine-in*	R1, R3, R9
Staff and consumer awareness for green activities	• *Highlighting menu description* • *Social media marketing* • *Signage* • *Training programs to raise awareness among employee*	R5, R8
Higher cost sourcing sustainable ingredients	• *Adjusting portion size* • *Adjusting menu offerings*	R7

R = Respondent - N = 10

Table 6 showed the tabular presentation of challenges of the restaurants in implementing and maintaining green pricing practices and how are restaurants responding to these challenges. The respondent is having challenges in sourcing sustainable ingredients, investing in eco-friendly packaging, and staff and customer awareness for green practices. The findings showed that they responded to the challenges by negotiating better terms and long-lasting relations with the suppliers, investing in compostable or recyclable packaging, social media marketing to the awareness of the customers that the restaurant is implementing green practices, training programs for the employees to make them aware of the importance of green practices, and lastly adjusting the menu offerings and portion.

Conclusions

1. Among the five indicators in product cost, implementing waste reduction of food and packaging waste got the highest ranking while reducing meat consumption was the lowest. Moreover, the study found that green pricing practices are highly practiced, with respondents valuing their implementation in terms of product costs.

2. The respondents believed that all indicators concerning green pricing methods in terms of product differentiation are highly practiced. This indicates that implementing a unique tasting menu as the highest and plant-based or vegan products as the lowest can differentiate products that can be an advantage in the competitive market.

3. Based on the conducted survey, all indicators on the assessment of green pricing strategies in terms of competition are highly practiced. It's implementing zero-waste initiatives has the highest interpretation while being transparent and proactive about its sustainability initiatives with the lowest grand mean. The restaurant communicates its sustainability efforts on the menu to present good perceptions of the customer's value of the products. This green perceived value is a crucial aspect of customer satisfaction and purchase intentions, as it influences their evaluation of a market offering based on their environmentally sustainable needs.

4. The five indicators of customer's perceived value of product received a highly practiced based on the evaluation of the respondents, the restaurant communicates its sustainability efforts on its menu has the highest interpretation while the restaurants that share stories and experiences of the restaurant's sustainability through newsletters and blogs got the lowest interpretation.

5. The company faces challenges in sourcing sustainable ingredients and packaging due to seasonal changes, supplier shortages, and consumer and staff awareness about green practices. Despite these challenges, the company is committed to creating sustainable solutions. The respondent addressing the challenges by diversifies their ingredient sources, implement menu engineering strategies, and invest in recyclable packaging. They also start composting initiatives and negotiate better terms with suppliers. They leverage economies of scale to lower prices and stabilize the supply chain. They explore local suppliers and adjust their menu to highlight environmentally friendly ingredients without compromising flavor and quality. They increase plant-based options and implement training programs to promote sustainability through menu descriptions, social media marketing, and signage.

Recommendations

The study's suggestions are as follows, based on its results and conclusions.

1. In terms of reducing meat consumption, restaurants should use plant-based food as an alternative ingredient for the specific product that will engage more health-conscious customers. Although the price may have increased from before, most customers will be satisfied with these changes because of the alternative plant-based ingredients.

2. The restaurant should think about using seasonal ingredients or introducing one-time specials to effectively set itself apart from the competition and excite customers. Additionally, asking customers for feedback or conducting surveys can give the restaurant important insights into their preferences and help them create new products that will suit their changing needs and tastes. Furthermore, using innovative marketing strategies to draw attention to the special qualities and advantages of these new products can help create excitement and increase consumer interest and engagement.

3. To obtain a competitive edge, restaurants need to offer distinctive items to set themselves apart from rivals, adjust to their surroundings, and encourage innovation. Restaurants ought to concentrate on creating eco-friendly products that will appeal to customers that care about the environment as well. This can be accomplished by forming alliances with suppliers who are dedicated to sustainability and who hold similar values. Additionally, by promoting an innovative culture within their companies, they may consistently enhance their green pricing tactics and obtain a competitive advantage in the marketplace.

4. In terms of customer perceptions can be significantly impacted by how reliable and credible the source providing green pricing suggestions is. The restaurant should communicate regarding how goods and services affect the environment can boost confidence and improve consumer perception. Also, reassure customers that dining at a restaurant with green pricing means not compromising quality or taste. Emphasize any positive reviews or awards the business has received for its food to reassure customers that they will have a satisfying meal.

5. The restaurants should continue to develop their product offering by using sustainable ingredients. By partnering with a local supplier and having a long-term relationship, they may reduce the cost of materials and offer an affordable but quality product to the customers. Also, they should invest in R&D for sustainable products to have a new offering of dishes and beverages. That way, they may attract more customers, especially environmentally conscious customers.

6. When it comes to implementing green pricing practices in restaurants, the challenges of finding reliable suppliers and training employees in green marketing can indeed be tough. To address the issue of sourcing reliable suppliers, restaurants can consider building long-term relationships with vendors who are transparent about sustainable practices. This could involve conducting thorough research, requesting certifications, and visiting supplier facilities when possible.

7. It's crucial to give staff members thorough training on the advantages of sustainability, how it fits with the restaurant's values, and how to properly explain these practices to patrons in order to prepare them for green pricing and marketing. Providing practical workshops, disseminating success stories, and rewarding employee involvement are further strategies for cultivating a sustainable culture in restaurants.

Compliance with Ethical Standards

The research study holds itself accountable for any issues or rules of ethics that arose throughout the procedure. The instruments utilized during this research were examined and authorized by the researcher’s adviser. The researchers distributed survey and interview questionnaires based on the statement of the problem. Participation in this research is entirely voluntary. It will be the participant's personal decision whether to participate or not. The respondents were allowed to demonstrate their collaboration by signing the researcher’s permission form, confirming they had fully comprehended the

survey and interview criteria, and agreeing to complete the surveys and interviews that were provided to participants. The permission form outlined the goals and objectives for carrying out a survey and interview that benefits the research, as well as a pledge to keep every participant's confidential data concealed. This study has no potential risks but will be beneficial in the field of hospitality education and the industry.

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HUMSS AS THE CHOSEN STRAND AND ITS INFLUENCE ON THE STUDENTS' COMMUNICATION SKILLS

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ABSTRACT

The importance of communication skills cannot be disregarded, especially today where communication plays a crucial part in our daily lives. Furthermore, poor communication skills may lead to the inability to maintain professional and personal relationships. With, this study aims to investigate and determine whether there is a statistically significant correlation between students majoring in the humanities and social sciences and their level of proficiency in social academic communication skills. This correlational study is delimited to thirty (30) students under Humanities and Social Sciences strand at a higher educational institution residing at the City of San Fernando, Pampanga, Philippines. The researchers of this study have utilized random sampling technique in selecting the respondents. The data of the assessment and survey questionnaires gathered from the respondents were evaluated using descriptive statistics. It is revealed through this study that there is a positive inclination among students for active participation in various group discussions, emphasizing the significance of collaborative learning experiences. Students perceive the connection between communication skills and success within their respective academic strands, indicating the perceived impact of effective communication on academic achievement. Additionally, it is recommended for some humanities and social sciences students to consider interpersonal interaction. This recommendation may lead to the improvement of knowledge, attending extracurricular performances, understanding textbooks, and using qualitative techniques such as interviewing to understand students' experiences and barriers to communication.

Keywords: *Communication, Senior High School, Communication Skills, Socio-Academic Skills*

INTRODUCTION

Communication is defined as the delivery, receipt, or exchange of information, thoughts, or ideas so that everyone involved completely comprehends the message. Communication is a two-way process that comprises the sender, message, channel, receiver, feedback, and context. Communication skills relate to a person's ability to successfully express information, thoughts, ideas, and feelings to others. These talents span a wide range of communication modalities, including verbal and nonverbal communication, writing communication, and listening. Effective communication skills include the ability to express oneself effectively, grasp what others are saying, and engage in meaningful and fruitful interactions. Good communication skills may help you go through life more effortlessly, making it simpler to connect with others. Poor communication skills, on the other hand, can damage professional and personal relationships.

On the other hand, skills in communication refer to how well students can execute these procedures effectively. As a result, the efficacy of communication plays a crucial part in making a choice, specifically whether there are advantages or disadvantages in the communication process (Hermawan et al. 2022). Meanwhile, communication skills inculcate professionalism in speaking styles, modes of self-expression, and attitudes toward others (Lucanus, 2015), and these attributes will serve students well in their professional careers. Communication skills are defined as the capacity to offer and receive various types of information, as well as to develop one's personality throughout one's life. (Abdikarimova et al., 2021). Daily, students engage in large numbers, exchanging news, ideas, sentiments, knowledge, and different points of view. Nowadays, studies show that this capacity is the most important aspect of higher education in terms of considering and maintaining positive connections with other individuals consequently, all students require these abilities to avoid miscommunication and difficulties.

Conversely, written communication is a subset of nonverbal communication that focuses on exchanging ideas through written language. It is employed to creatively or academically express ideas and opinions. When it comes to written communication, slow learners' abilities are categorized as non-fluent because some students struggle with writing correctly, while others simply do not want to write (Nanang et al. 2016). They are employed in writing to transmit messages. Many students struggle to communicate ideas or express themselves in writing because some are better at it orally than in writing, and some find it difficult to do both. While everyone agrees that having strong oral and writing communication skills is essential, there is substantial (Raba, 2017). Speaking capabilities are just as important as other skills that must be acquired to increase communication among the intended language learners. In the language school environment, speaking is a process in which students use discourse to negotiate meaning and put their newly gained language abilities to use.

Social Academic Communication Skills

A person's capacity to connect, cooperate, and communicate well in an academic or educational context is referred to as their social academic communication abilities. By improving their communication abilities, students may deepen their bonds with themselves, others, and society. Communication skills are also necessary for the development of abilities and sensitivity in people's social lives, as well as the construction of constructive interpersonal relationships and the eradication of cultural barriers (Rubtsova, 2019). Because they enable students to articulate their learning outcomes and achieve successful learning outcomes, communication skills are vital to academic success (Supena et al., 2021).

Social and academic communication skills demonstrate that there are several factors to good communication in educational contexts. Collaboration, cultural knowledge, digital literacy, clear written and verbal contact, active listening, and critical thinking are all part of the process. To foster a positive learning environment and encourage academic success, it is crucial for learners, teachers, and institutions to acquire and refine these abilities. In order to feel confident and motivated for academic pursuits, learners desire to be able to communicate effectively with their peers and instructors at educational institutions (Alawamleh et al., 2020). Effective communication skills are critical for teachers in conveying instruction, classroom management, and interaction with students in the classroom. The teacher must instruct kids with varied ways of thinking.

Impact of communication skills among HUMSS students

Addressing the relationship between these interpersonal abilities and career preparation can benefit students as well as educators by allowing for the adaptation of learning methodologies and individuals' success in a variety of professional settings. This study recognizes the importance of these skills in deciding students' potential career paths and seeks to shed some insight into the relationship between communication competency and career preparation among students majoring in the humanities and social sciences. It is widely known that effective communication skills are required for success in both academic and professional settings. Students specializing in humanities and social sciences are known in academic circles for honing their analytical, communication, and critical thinking skills. These skills include empathy, critical thinking, and the capacity to have meaningful conversations about challenging social and personal issues. Inadequate verbal communication and teamwork are two examples of poor communication at work. Errors in communication, unreliability, and malevolent communication could also be factors in their coworkers (Puscas et al. 2021).

Work immersion programs should help students prepare for these potential obstacles by offering the required direction, support, and training. It may involve instruction on workplace customs and guidelines, teamwork and communication techniques, time management strategies, and mentorship and supervision from upper management as explained by seasoned experts (Kurtz et al. 2017). Not only are effective

communication skills essential in the job, but they also demonstrate a well-rounded education. Because their coursework covers a wide range of topics, students majoring in the humanities and social sciences develop great interpersonal skills that extend beyond academic debate. According to Fahmi and Ali (2022), time-related factors, the key elements impacting students' dropouts from MOOC courses were discovered to be motivation, interaction, subject matter, workload, and communication. Additionally, Gaur (2020), discovered that interpersonal variables such as institution and familial assistance, interaction, and communication (social presence) can be utilized to anticipate a high risk of dropout among learners in virtual settings.

Humanities and Social Sciences Academic Course

An academic course in the humanities and social sciences that focuses on communication is an extensive area of study that looks at the craft of effective communication to investigate the complexities of society dynamics and human experience. This course explores the various facets of people exchanging ideas, information, and stories in private and public settings. According to Sudi et al. (2024) asserts that studying the humanities fosters students' ability to 5 communicate effectively, broadens their perspective on the world, and fosters the growth of their capacity for critical and creative thought. According to Evans et al. (2024), it supports educators and students in creating well-rounded thinkers by highlighting cultural and ethical commitments and values. regarding the essential communication skills covered in the HUMSS strand.

Oral communication abilities are necessary for thinking and learning, and they are crucial for the development of literacy. It serves as the binding agent between all the constituent parts of a language. Talk helps students organize their experience and knowledge, explore, and comprehend ideas and concepts, identify, and solve problems, and express and clarify their thoughts, feelings, and opinions in addition to helping them communicate information1. It covers a broad range of topics, such as language, media studies, interpersonal relationships, and communication theory, giving students the tools they need to understand and improve their communication abilities. Essentially, this course provides a comprehensive method for deciphering the nuances of interpersonal communication, empowering students to thrive in a globalized society where proficient communication is an essential ability. While social sciences are an academic field that focuses on how people interact in society, institutions, and the wider world, humanities study will help you develop your writing, information analysis, and research skills as well as your critical and creative thinking abilities.

Research Questions

The purpose of this correlational study is to investigate and determine whether there is a statistically significant correlation between students majoring in Humanities and Social Sciences and their level of proficiency in social academic communication skills. This research specifically aims to respond to the following questions:

1. What is the participation rate of students in participating in various group discussions, and team projects in terms of school-related work?

2. What are the communication breakdowns faced by the Humanities and Social Sciences Students?

3. Is there a significant relationship between the student's chosen academic strand and their communication skills?

METHODOLOGY

The study utilized a non-experimental method that was quantitative, namely a descriptive correlational analysis. Quantitative research is used to test hypotheses by examining the relationship between variables. It utilizes statistical and numerical methodologies. According to Creswell (2014), quantitative research is an inquiry into a social or human problem based on testing a theory composed of variables, measured with numbers, and analyzed with statistical procedures to determine whether the predictive generalizations of the theory hold true. Additionally, a correlational study is utilized wherein this approach to research does not attempt to manipulate the variables; it describes the relationship between two variables within a single group. In the lens of Tan (2014), correlational research aims to establish correlations between two or more variables. Simply expressed, it examines to see if a rise or decrease in one variable corresponds to an increase or decrease in another. In terms of the respondents of this study. The researchers focused on 30 students hailing from the Grades 11 and 12 of the Humanities and Social Sciences strand at a higher educational institution situated City of San Fernando, Pampanga, Philippines using the non-probability sampling specifically the random sampling technique. Considering Stratton (2021), a simple random sample technique is a population subset that has been chosen randomly. In this sampling procedure, each member of the population has an exactly equal probability of being selected.

In collecting data from the respondents, the researchers utilized a researcher-made questionnaire in accordance with the study's objective. The survey questionnaire was distributed to participants using various forms of media, notably Google Forms. In collecting the data, the researchers of this study have followed the ethics in research by ensuring that the respondents are wary of the pivotal role they will play on the study as well as treating the data with full anonymity and confidentiality in accordance with the Data Privacy Act of 2012. To evaluate the relationship between Humanities and Social Sciences students and their social academic communication skills the researcher organized and evaluated the data using Pearson r Correlation Coefficient to identify the strength as well as the course of a linear correlation that exists between two independent variables, in this case, academic majors (Humanities and Social Sciences) and Social academic communication skills. In this context, a positive relationship would indicate that as students prefer the Humanities major, their social academic communication skills are enhanced whereas an opposite relationship would indicate that as students move

through the Social Sciences major, their communication skills could become less effective.

RESULTS AND DISCUSSION

Demographic Profile of the Respondents

Sex

The frequency and percentage of the respondents in our study based on their sex are shown in Table 1. Based on the data collected through the survey questionnaires handed out to the respondents, female respondents obtained a frequency of 18 (60%), making it the highest respondents between the two. On the other hand, male respondents have a total of 12 (40%). With that, it is implied that most of the respondents who answered our survey are female.

Age

The frequency distribution and the percentage of the respondents according to their age are shown in table 1. The results show that most of the respondents are 17 years old with a frequency of 16 (53.3%). Whereas 15-year-old respondents garnered the lowest frequency of 1 (3.3%). On the other hand, 16-year-old respondents got a frequency of 8 (26.7%). Second to the last 18-year-old respondents got a frequency of 3(10%). Lastly 19-year-old respondents obtained second to lowest of frequency 2 (6.7%). This data offers the indication of the frequency distribution and percentage of the respondents according to their age group.

Grade and Section

The frequency distribution and respective percentages of the respondents according to their Grade and Section are shown in Table 1. Based on the data that was collected, it appears that most of the respondents that answered our survey are from Grade 12-Y1-2R with a total of 10 (33.3%). The lowest respondents shown in the results are from the Grade 11-Y1-1P with a frequency of zero. Second to the lowest respondents are from the Grade 12-Y1-1P garnered a frequency of 2 (6.7%). Next are from the Grade 11-Y1-1R and Grade 11-Y1-2R obtaining both a frequency of 4 (13.3%). Lastly, are from the Grade 11-Y1-3R and Grade 12-Y1-1R both having a frequency of 5 (16.7%).

Table 1
Frequency Distribution and Percentage of the Respondents table

Demographic profile		Frequency	**%**
Sex	Male	12	40.0
	Female	18	60.0
Age			
	15 yrs. old	1	3.3

	16 yrs. old	8	26.7
	17 yrs. old	16	53.3
	18 yrs. old	3	10
	19 yrs. old	2	6.7
Grade 11			
	1P	0	0
	1R	4	13.3
	2R	4	13.3
	3R	5	16.7
Grade 12			
	1P	2	6.7
	1R	5	16.7
	2R	10	33.3

The participation rate of students in various discussions

As shown in Table 2, the subscale "*The participation rate of students*" has a weighted mean of 2.37 and a standard deviation of 0.85. Table 2 illustrates that most of the students "*Agreed*" that majority of them participated in various group discussions. According to Bryant et al. (2021), students who decline to take part in the mentioned activities are passive students. Participation is counted as being alert to events, answering the questions, and engaging in group discussion. As per Li et al. (2020), participation spurs students' collaboration, social interaction, the inspiration for teamwork, and the amelioration of individual improvement in the classroom. . Indeed, classroom participation plays a considerable role in improving the teaching and learning process.

Communication breakdown faced by students.

Table 2 delineated the mean and standard deviation of items under the subscale "*Communication breakdown faced by students*". This subscale has a weighted mean of 3.10 and a standard deviation of 0.15; majority of respondents "*Agreed*" on the said subscale. Communication breakdown frequently occurs in which individuals communicate with one another. As in communication, people can deliver and receive the idea or message and even negotiate the meaning (Liu et al., 2022). To establish excellent communication, the messages sent by the speaker must be comprehended by the interlocutor. The capacity to talk is critical in communication. Furthermore, communication suffers a significant breakdown in the lack of proper grammar usage. As stated by Trenholm (2020), the framework of communication strategies is a procedure that manages creating interlanguage mistakes. Communication techniques assist students in communicating with native speakers of the target language. These tactics are tools that help learners communicate effectively in the target language with native speakers. They provide a framework for navigating and managing possible communication failures, ultimately improving overall communication.

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The relationship communication skills and chosen academic strand.

As Table 2 exhibited the weighted mean and a standard deviation of the subscale "*The relationship of Communication skill and academic strand*", having a weighted mean of 3.25 and standard deviation of 0.20, which means that respondents "*Agreed*" with all the items on the said subscale. Meanwhile, Communication skill is the most basic condition for the education to be done in a healthy way. There are several allusions to communication and communication skills in the most current social studies curriculum (Uygun, 2018). Having an ideal strand provides learners with a feeling of self-assurance and can assist pupils in becoming passionate about their chosen job. Humanities and Social Sciences, which focuses on acquiring a greater grasp of the arts, culture, literature, politics, and society (Magnaye, 2020).

Table 2

Descriptive Statistics for Communication Skills

Benchmark Statements for Communication Skills	Mean	*SD*	Verbal Interpretation
The Participation rate of students.			
1. How confident are you that you can interact effectively with your professors and peers in a classroom situation?	2.50	0.77	Disagree
2.How often do you participate in group discussions or team projects as a requirement for your coursework?	2.96	0.80	Agree
3. Do you often participate in recitations in class?	3.30	0.66	Strongly Agree
4.How comfortable are you with giving presentations or speaking in front of your classmates and professors?	2.86	0.73	Agree
5.Do you collaborate properly with your group mates?	1.70	0.50	Strongly Disagree
6. Are you active in group discussion in class?	1.13	0.34	Strongly Disagree
7.I constantly seek opportunities for academic interaction and teamwork.	1.36	0.49	Strongly Disagree
8. With professors or instructors, I feel confident establishing a conversation with them.	3.20	0.55	Agree
Weighted Mean	**2.37**	**0.85**	**Agree**
Communication breakdowns faced by Students			
1. Do you believe that there is such a communication breakdown faced by the students in Humanities and Social Sciences Students?	3.26	0.52	Strongly Agree
2.Do you experience any problems with comprehension of complicated educational content and clearly expressing ideas?	2.93	0.69	Agree
3. Do you feel any communication breakdowns during public speaking?	3.03	0.71	Agree
4. Reviews from other people offer valuable insights about my interpersonal strengths and weaknesses.	3.2	0.55	Agree
Weighted Mean	**3.10**	**0.15**	**Agree**

The relationship of communication skills and chosen academic strand			
1.Do you feel that your academic program (Humanities or Social Sciences) has helped you improve your communication skills?	3.3	0.66	Agree
2.Do you consider having strong interpersonal communication skills have an impact in the academic state of Humanities and Social Sciences students?	3.43	0.56	Strongly Agree
3.There has been noticeable progress in my communication skills since starting my academic program.	3.4	0.49	Strongly Agree
4.Do you agree that humanities and social science contributes to make your communication skills efficient?	3.4	0.62	Strongly Agree
5.In academic presentations, I have no issues expressing my thoughts and opinions.	2.96	0.76	Agree
6. I consider myself integrated socially in my academic program.	3.03	0.66	Agree
Weighted Mean	**3.25**	**0.20**	**Agree**
Grand Weighted Mean	**2.90**	**0.60**	**Agree**

Relationship between Communication Skills and Academic Strand of the Respondents

Pearson r is utilized to assess the relationship between communication skills and academic strand of the respondents. The result shows a not significant positive relationship between the communication skills and academic strand of the respondents. ($r = 0.177$, $p = 0.566$). As can be understood from the definitions, communication is the necessity of people living together and becoming social beings. The adequacy of the relationship between individuals as well as quality and power are related to the proper and effective establishment of communication. Because the more beneficial and more understandable the conversation, the more success, economic and social development, and personal integrity develop (Karacan and Akoglu, 2021). Meanwhile, Mascuñana and Lazaro (2022) mentioned that the relationship between the two variables is only significant on an average level. As a result, the efficiency of language activities is judged not merely by their strand specialization or whether they are aimed to educate students for their future careers.

Table 3

Test of Correlation between the Communication skills and Academic strand of the respondents

			Communication and Academic Skills	
Variable	***r value***	***p value***	***Degree of Relationship***	***Level of Significance***
Communication Skills	0.177	0.566	Positive with Relationship	Not Significant
Academic Strand	0.177	0.566	Positive with Relationship	Not Significant

Conclusions

The following are the conclusions in accordance with the summary of the results.

1. The profiles of the respondents were classified based on their grade level, communication skills, and written skills. With regards to their grade level, there are 13 students in grade 11 (43.3%) and 17 students in grade 12 (56.7%) were classified as respondents.
2. The Knowledge of the respondents in terms of their social academic skills which is composed of 30 items. The percentage of the scores of the respondents ranges from 10- 100% with 15 out of 30 items answered agree and the remaining 15 yielded answers disagree and strongly agree the percentage of responses.
3. The correlation between the respondents and their social academic communication was delineated through the following subscales: The participation rate of students ($\bar{x}$ = 2.37, SD = 0.85), Communication breakdowns faced by Students ($\bar{x}$ = 3.10, SD = 0.15), The relationship communication skills and chosen academic strand ($\bar{x}$ = 3.25, SD = 0.20).
4. The test of correlation between the respondent's demographic profile and communication was evaluated using Descriptive statistics. Results revealed based on the verbal interpretation the respondent does have a significant relationship with their communication and their academic strand.
5. The test of correlation between the respondents' communication skills and academic strand was evaluated using Pearson r. Results revealed that the respondents' communications skills does not have a significant relationship with the academic strand with a rating of (r=0.177, p= 0.566) which means there's no significant relationship between the two variables.

Recommendations

In consideration of the summary of results, findings, and conclusion, the following recommendations are suggested:

1. Given that the study's scope is limited to Humanities and Social Sciences students, it may be suggested that other learners associated with the strand should be considered because interpersonal interaction manifests itself and applied to every individual in any circumstances, at any time, and at any cost due to communication is one of our methods of conversing and conveying thoughts as well as concepts with others.
2. The researchers urge that students improve their understanding of knowledge to have more effective exchanges of information with other individuals and prevent or minimize difficulties with communication while speaking with people or with one another.
3. Learners in the Humanities and Social Sciences may benefit from attending more extracurricular performances that help them improve their interpersonal relationships and speaking abilities.
4. Understanding a lot of textbooks or literary works might be suggested to improve our written communication vocabulary, grammar, and writing abilities.
5. To understand more about the subjective experiences and perspectives of the respondents, qualitative techniques like as interviewing may be used to supplement the quantitative findings and acquire more comprehensive knowledge into the barriers to communication that students face.

Compliance with Ethical Standards

This research strictly adheres to the ethical standards set by the institution and the body of knowledge. All information and data coming from the respondents are solely for academic purposes only. In line also with the Data Privacy Act of 2012, the researchers strictly preserved the anonymity and confidentiality of the respondents.

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IMPROVING THE NUTRITIONAL STATUS OF GRADE 7-8 STUDENTS OF INHS THROUGH SCHOOL-BASED FEEDING PROGRAM

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ABSTRACT

A School- Based Feeding Program (SBFP) was undertaken in Infanta National High School, Province of Quezon involving Grade 7 to 8 students whose nutritional status is severely wasted and wasted. A total of 22 Grades 7 and three Grade 8 severely wasted and wasted students were fed for 120 feeding days during lunch time composed of rice, meat, vegetables, and fruits prepared by the parents' beneficiaries and other teachers. Weight and height measurements were done every 40 days. Findings showed that after the feeding program 23 out of 25, or 92% of the beneficiaries had increased their weights and heights. Two students remained severely wasted. The first one was not able to take her rations regularly since she had not attended the school regularly, while the other one has an insecurity problem and was ashamed of his nutritional status and therefore did not participate in the feeding program regularly. This feeding program was believed to have significantly reduced nutritional problems and can contribute to the student's successful academic achievement at all levels.
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Keywords: *nutritional status, severely wasted, wasted, rations, feeding program*

INTRODUCTION

School Feeding Programs in the Philippines were claimed to have increased school participation among food insecure students. In many poor students, hunger has been a barrier to school activities participation. A hunger-stricken student cannot only

comprehend better but cannot perform as well in school activities. Besides, such learners are also likely to quit school because they have to deal with their immediate subsistence needs before they get ready for schooling. Thus, low school performance, low class attendance and high student drop-outs are recurring problems in student's education among poor families.

Infanta National High School (INHS) is one of the public schools in Infanta, Quezon where many students came from low-income families. Food insecurity has been a barrier to students' active participation in school. Most of the parents of the students are engaged in agricultural activity. Unfortunately, they find it difficult to feed the entire family since their own production of food falls short of the demand in the household. Consequently, even children need to engage in some kind of activities to generate livelihood for their households. Thus, many students in food insecure families remain slow in school performance. On the other hand, even if schooling is free of charge, families in such situation still do not have the means to cover some clothes, shoes or transportation. These constraints also keep students from participating in schools but rather force them to stay home and help parents in household chores. Hence, to overcome such problems, investment in education must target not just students, but also family expenditures in a small amount.

In response to these challenges, the Department of Education (DepEd), through the School Health –of Learner Support Services (SHD-BLSS) mandated to implement the School-Based Feeding Program (SBFP) for School Year (SY) 2016-2017 to address under-nutrition and short term hunger among public school children.

Likewise Department Order (DO) 8, series of 2007 revised guideline on the operation and management of school canteen in public elementary and secondary schools mandate that the 35 % of the net income derived from the operation of the canteen shall be utilized for school feeding program or the undernourished pupils or students. Out of 3,093 students there are 1.13% severely wasted and 5.73% wasted students in INHS during the SY 2016-2017.

In response to the above mentioned problem, School- Based Feeding Program in INHS has been operated within 120 school days wherein the researcher, some parents of the beneficiaries, other teachers voluntarily helped by marketing, preparing and cooking foods feed the students. Feeding is done inside the school compound (School Meals). In the School Meals scheme, students are fed during lunch in school. Such incentive directly targeted wasted and severely wasted students.

School feeding Programs are considered to be a sound investment in education , there is evidence that school feeding programs increase cognition (Kristjansson et al 2016) , educational achievement (Nyakundi, E. M. 2017) particulary if supported by complementary action such as deworming and microfortification or supplementation (Jukes et al 2002).

Food for Education programs successfully enhance the health and nourishment of the targeted children, these are liked by parents, teachers, and leaders. and found that feeding programs helped students do better. McEwan, P. J. (2013).

Many proof-of-concept studies prove that the implementation of the feeding program helps to increase the percentage of enrollment,attendance on a regular basis and decreased dropout rates (Yendaw, E., & Dayour, F. 2015). The nutrition education program has been effective in helping teenagers better understand, feel positively about, and take action on nutrition. Therefore, future programs intended to encourage healthy eating habits among teenagers should include interactive and innovative components. Wang, D.et al (2015).

Malnutrition in the Philippines was caused by a few factors, such as poverty, a lack of access to wholesome food, a shortage of medical treatment, and, in certain places, subpar sanitation and hygiene standards. The issue of malnutrition persisted despite attempts by the government and different organizations to address it through initiatives like enhanced healthcare services, nutrition education, and supplemental feeding. This underscores the need for long-term and all-encompassing interventions to effectively combat malnutrition.

Malnutrition is also a dangerous condition that develops when the body does not get enough nutrients to function properly. Poor nutrition can be caused by a lack of food or an unbalanced diet that is missing or insufficient in one or more nutrients (Chinyoka and Naidu, 2013). Children who do not consume adequate amounts of key nutrients, including calcium, potassium and vitamin C may be unable to work to their full potential at school (Nabarro et al. 2012). Knowing more about what nutritional deficiencies can lead to, in terms of learning, will help families to feed their children adequately to succeed in class. This shows that nutrition is of paramount importance in the academic performance of grade seven children.

For many Filipino families, caring for their precious children is a top priority and responsibility. However, not all are able to meet their kids' needs. Aside from safe play and quality education, children from poor families are often bereft of basic essentials, the most overlooked of which is proper nourishment in their wonder years. Without enough food, these children grow up vulnerable to diseases, hunger and malnourishment, and thus suffer impaired learning abilities in their school-age years, and Throughout adult life, according to studies.

The School-Based Feeding Program (SBFP) in the Philippines has been implemented to address issues of malnutrition and hunger among school-aged children. Here are some impacts of the SBFP (1). Improved nutrition: one of the primary goals of the SBFP is to improve the nutritional status of school children. By providing nutritious meals, the program helps ensure that children receive essential vitamins and minerals necessary for their growth and development; (2) increased school attendance: children who are well-fed are more likely to attend school regularly. The provision of meals through the SBFP incentivizes attendance as children know they will receive a meal at school,

reducing absenteeism rates and (3) enhanced academic performance: proper nutrition has been linked to better cognitive function and academic performance. By addressing hunger and malnutrition, the SBFP contributes to improved concentration, memory, and overall academic achievement among participating students.

Conceptual Framework

In the school year 2016-2017, DepEd-funded SBFP in accordance with the General Appropriations Act (GAA) of 2016 under the Republic Act (RA) 10651 mandated to continue the implementation of SBFP in all Public Elementary Schools. Specifically, SBFP aims to address undernutrition and short- term hunger among severely wasted and wasted public school children. The program primarily aims to improve the nutritional status of the student beneficiaries, specifically in terms of their height and weight, by at least 70% at the end of 120 feeding days.

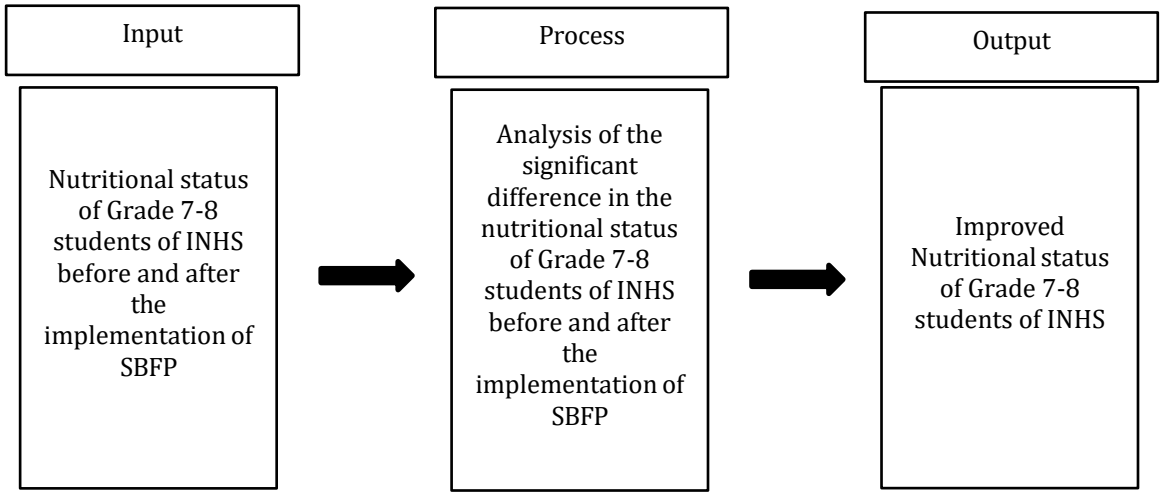


Figure 1. Conceptual paradigm on improving the nutritional status of grades 7-8 Students of INHS

Research Questions

Generally, the purpose of this study was to investigate the effects of school feeding programs on nutritional status of the selected wasted and severely wasted Grades 7 and 8 students conducted for 120 days in Infanta National High School Infanta, Quezon.

Specifically, this study aimed to answer the following research questions:

1. What is the nutritional status of grade 7-8 students of INHS before and after the implementation of the School-Based Feeding Program?
2. Is there a significant difference in the nutritional status of grade 7-8 students of INHS before and after the implementation of the School-Based Feeding Program?
3. What are the implications of the findings of this action research for the improvement of nutritional status of Grade7-8 students of INHS

METHODOLOGY

A total of 25 Grades 7 and 8 students of INHS whose nutritional status were determined to be severely wasted and wasted were selected to participate in the SBFP for 120 days. The school principal, the Department Head of Technology and Livelihood Education (TLE), the school nutrition coordinator, and the school canteen manager held a meeting to plan the feeding program that started on September 2016 ended on March 2017 to complete the 120 feeding days. They were also involved in the feeding activities daily monitoring. School heads and other school personnel were oriented on the SBFP mechanics before the program started. Parents of the beneficiaries were oriented on the selection of nutritious food and its appropriate preparation to maintain its nutrients, flavor, color, and aroma. They also committed their service during the program implementation right in the food preparation. All mechanics of SBFP for elementary schools were adapted by INHS in implementing the program except that the budget utilized for it was derived from the 35 % of the net income of the canteen operation. SBFP was therefore limited to the grades 7-8 severely wasted and wasted students due to financial constraints.

Initial weight and height were among the baseline data gathered from the SBFP beneficiaries before the program implementation. After 120 days, their BMI was again measured in order to determine the significant improvement in their nutritional status. Improved nutritional status was indicated by a significant increase in the SBFP beneficiaries' BMI. On the other hand, the SPFP implementation was successful when at least 70% of SBFP beneficiaries' nutritional status had improved (Figure 1).

RESULTS

Table 1 presents the nutritional status of the selected SBFP beneficiaries. Twenty-five Grades 7 and 8 students were selected from among the 3,699 INHS students having problematic nutritional status categorized as severely wasted (88%) and wasted (12%) (Figure 1). They were fed nutritious food for 120 days. (Food and Nutrition Research Institute (FNRI) and Word Health Organization (WHO). The BMI of the SBFP beneficiaries ranged from 11.8 kg to 14.4 kg before the feeding program. The range had improved; became 12.9 to 19.5 kg after 120 feeding days.

Table 1. Nutritional status of SBFP beneficiaries before and after the implementation of the SBFP

Student No.	BMI before (kg)	Nutritional Status before	BMI after (kg)	Nutritional Status after	Difference in BMI after 120 feeding days
1	13.4	Wasted/U	18.5	Normal	5.1
2	13.8	Wasted/U	18.2	Normal	4.4
3	13.3	Severely Wasted/SU	13.7	Severely Wasted/SU	0.4
4	13.4	Wasted/U	19.5	Normal	6.1
5	14.2	Wasted/U	18.6	Normal	4.4
6	13.9	Wasted/U	16.7	Normal	2.8
7	13.3	Severely Wasted/SU	15.9	Normal	2.6
8	14.3	Wasted/U	19.5	Normal	5.2
9	13.9	Wasted/U	16.5	Normal	2.6
10	14.4	Wasted/U	17.2	Normal	2.8
11	13.2	Wasted/U	14.9	Normal	1.7
12	14.2	Wasted/U	14.7	Normal	0.5
13	14.2	Wasted/U	17.5	Normal	3.3
14	13.2	Wasted/U	16.3	Normal	3.1
15	13.8	Wasted/U	17.5	Normal	3.7
16	14.5	Wasted/U	18.3	Normal	3.8
17	14.2	Wasted/U	15.6	Normal	1.4
18	14.4	Wasted/U	17.0	Normal	2.6
19	14.0	Wasted/U	18.5	Normal	4.5
20	14.4	Wasted/U	16.0	Normal	1.6
21	13.6	Wasted/U	17.6	Normal	4
22	11.8	Severely Wasted/SU	12.9	Severely Wasted/SU	1.1
23	14.1	Wasted/U	17.3	Normal	3.2
24	14.3	Wasted/U	15.3	Normal	1
25	14.0	Wasted/U	17.8	Normal	3.8
Mean	13.832		16.860		3.028
Std Deviation	0.594		1.697		1.518
Std. Error	0.119		0.339		0.304

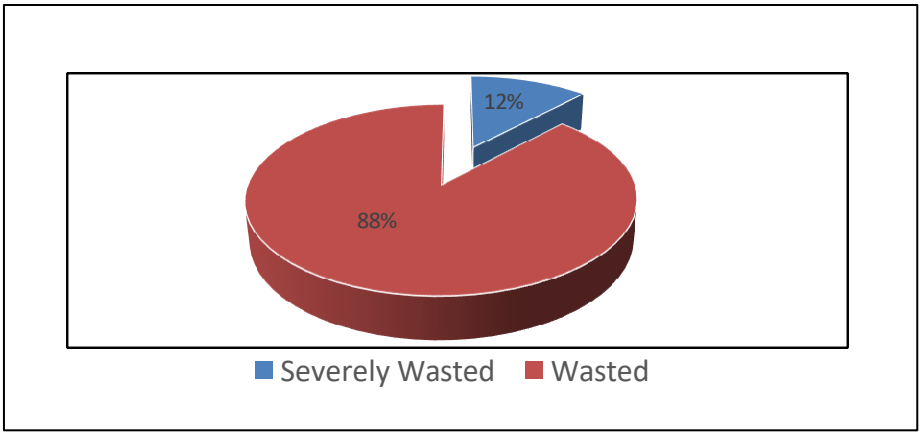


Figure 2. The nutritional status of the SBFP beneficiaries categorized as severely wasted and wasted before the feeding program.

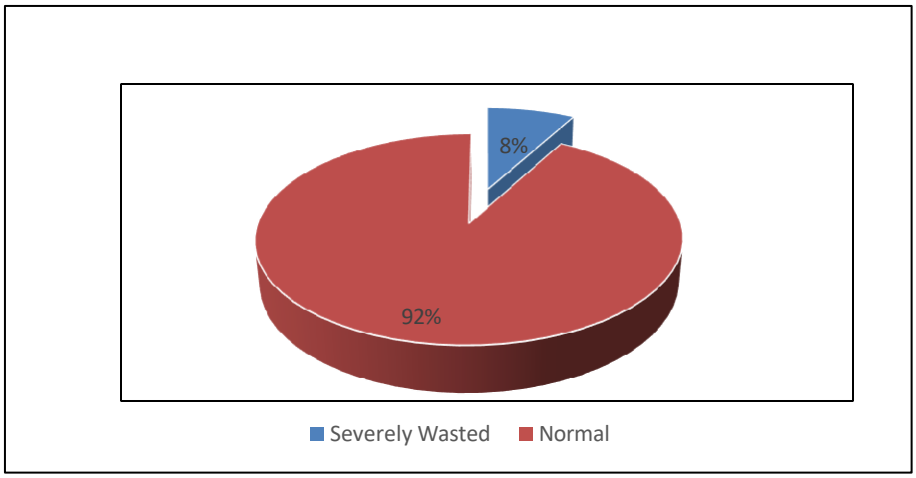


Figure 3. Nutritional status of the 92% SBFP beneficiaries had improved after 120 feeding days.

Table 2. T-test results of the change in BMI before and after 120 feeding days

	Mean	Std. Deviation	Std. Error Mean	Lower	Upper	t	df	Sig. (2-tailed)
Difference in BMI after 120 feeding days (BMI2-BMI1)	3.028	1.518	0.304	2.401	3.655	9.973	24	0.000

DISCUSSION

Findings showed that 92% of the SBFP beneficiaries had successfully improved their nutritional status (Figure 2). T-test results (Table 2) indicate that there was a significant difference in means of BMI before and after the feeding program. It further indicates an improved BMI of the beneficiaries after 120 feeding days. The results translate to a successful SBFP implementation in INHS for the school year 2016-2017.

Conclusions

There were 25 severely wasted and wasted Grades 7 and 8 students of INHS subjected to the SBFP for 120 feeding days. A total of 92% had improved their BMIs after their continuous participation in the feeding program. Only 2 students (18%) remained in a severely wasted status due to their inconsistent participation. The significant increase in BMI after the feeding program translates to a successful program implementation that needs to be sustained every school year.

Recommendations

SBFP must be implemented throughout the year in all schools with similar nutritional conditions to further address rampant nutritional problems in our country. Make some counseling on the importance of nutrition to the body to encourage all severely wasted and wasted students to participate in SBFP to attain 100% result. The government must include the secondary schools to allocate some budget on feeding program to sustain the needed all nutrients to the target beneficiaries.

Compliance with Ethical Standards

The researcher conducted this action research on school-based feeding program in a manner that promotes the well-being, dignity, and rights of all participants involved. And the researcher addressed these ethical considerations:

1. Ensured that all participants, including students, parents/guardians, teachers, and school administrators, are fully informed about the purpose, procedures, potential risks, and benefits of the research. Consents were voluntary, and participants were informed that they have the right to withdraw at any time without consequences.
2. Safeguarded the privacy of participants by ensuring that their personal information is kept confidential. Data were anonymized wherever possible to protect participants' identities.

3. Ensured that the research aims to benefit participants and the broader community. Prioritized the well-being of students by providing nutritious meals that meet dietary standards and promoting their health and academic performance.
4. Secured precautions to minimize any potential harm to participants. Monitored the quality and safety of the food provided and ensured that the program does not inadvertently stigmatize or discriminate against any students.
5. Ensured that the school-based feeding program is accessible to all eligible students, regardless of socio-economic status, ethnicity, or any other characteristic. Avoided creating favoritism in the distribution of resources.
6. Recognized and respected cultural, religious, and dietary preferences within the school community. Offered menu options that accommodate diverse dietary needs and preferences and avoided imposing one-size-fits-all solutions.
7. Maintained transparency throughout the research process by openly communicating with stakeholders about the program's goals, progress, and outcomes. Established mechanisms for feedback and accountability to ensure that the program operates with integrity.
8. Involved stakeholders, including students, parents/guardians, teachers, and community members, in the design, implementation, and evaluation of the feeding program. Respected their perspectives and incorporated their input to make the program more responsive to local needs and preferences.
9. Disclosed any potential conflicts of interest, such as financial relationships with food suppliers or vested interests in particular outcomes. Acquired steps to mitigate bias and ensured the integrity of the research findings.
10. Regularly assessed the effectiveness and impact of the feeding program through ongoing monitoring and evaluation. Used feedback from participants and stakeholders to identify areas for improvement and make necessary adjustments to enhance the program's success.

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INFLUENCE OF TENNIS COACHES ON ATHLETES' SELF-EFFICACY

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ABSTRACT

This study aimed to investigate the influence of tennis coaches on athletes' self-efficacy. The quantitative research methodology was used to describe the characteristics of tennis athletes from different universities and analyzes the level of coaches' self-efficacy as well as the level of athletes' self-efficacy. Using a researcher-made questionnaire as the main instrument, divided into three sections, the study investigated the associations between coaches' and athletes' level of confidence, social skills, and decision-making abilities, which influence tennis playing efficacy, as well as athletes' self-efficacy. Key findings revealed that tennis athletes demonstrated high, low and very low competitiveness at institutional, regional, national and international levels across different playing and performances. Coaches demonstrated very high level of confidence, social skills and decision-making abilities. Athletes demonstrated high level of confidence, social skills and decision-making. Significant difference was revealed on the confidence and decision-making ability and no significant difference in their social skills. There were no significant relationships on coaches and athletes' confidence and social skills. Significant relationship was revealed in the decision making and self-efficacy of coaches and athletes. Finally, given the findings of the study, it is recommended that an individualized development plan be developed for each athlete. For coaches, it is recommended that regular capacity building trainings be conducted, especially in the areas of confidence, social skill and decision-making abilities.

Keywords: *Athletes, confidence, decision -making, influence, self-efficacy, social skills, tennis coaches*

INTRODUCTION

Tennis conveys the concepts of fairness, wisdom, etiquette, and civilization to people, and these concepts continue to guide people in their thoughts and behaviors to continue to carry forward this noble quality of will and cultivate the excellent qualities of honesty and trustworthiness, modesty and prudence for teachers and students. Moreover, there is evidence that tennis coaches in universities are perceived as responding differential to more and less successful students (Fletcher & Roberts, 2019). With the development of the times and the progress of society, people are paying more and more attention to sports, even though tennis has caught the attention of university students and athletes. At present, only a limited number of universities offer tennis teaching courses.

A higher-performing athletes rated their coaches as engaging in significantly higher levels of training and instruction in universities as having a more democratic and a less autocratic decision-making style, as being more socially supportive, and as offering more positive feedback than did lower-status athletes labeled “survivors” by their coaches (Chelladurai,2020).Important qualities have a subtle guidance and education function for coaches and players in school, making them develop in the right and healthy direction of life, and educating them to respect others, respect themselves and obey discipline, which is consistent with the guidance and education function of campus culture, therefore, tennis can promote the guidance and education function of campus culture (Smith, Smoll, & Hunt, 2022). Moreover, tennis is an elegant sport, which combines sports and aesthetic teaching in one. On the one hand, tennis is played one-on-one, and students may prefer to meet more friends and join the sport together. On the other hand, tennis requires a great deal of skill, which demands the strategic skills of the participants. Engagement in group physical activities, sports, and games emerges as a cost-effective strategy known to enhance socialization skills and overall social well-being among individuals diagnosed with ASD (Coffee, 2019). For instance, such involvement has been associated with improvements in assertiveness, self-control, and self-esteem linked to physical prowess and appearance (Rees, 2019).

Nazarudin et al. (2019) found that the relationship between confidence and self-efficacy was particularly significant in decision-making and social skills. This further emphasizes the importance of developing self-confidence in athletes and coaches to promote higher levels of self-efficacy. Nohria and Khurana (2020) found that coaches' self-efficacy directly influenced athletes' performance. This is consistent with the notable association between coach and athlete self-efficacy in the present study, furthering understanding that coaches play a key role in athlete’s performance.

The theory of achievement goal emphasizes the purpose and significance of actions directed toward goals based on individuals' definitions of success and their evaluations of whether they have displayed competence, decision-making skills, confidence, and social abilities with peers (Kauffmann, 2020). At the core of the theory are two key concepts: individual goal orientations, which steer perceptions of

achievement and behavior, and the motivational atmosphere established within achievement environments (Kellett et al., 2021).

The theory delineates two distinct understandings of success manifested in mastery (task) and ego achievement goal orientations. In mastery orientation, success is internally referenced and defined through personal advancement, enjoyment, exertion, and learning from errors (Lyle, 2019).

Self-efficacy, first introduced by psychologist Albert Bandura, is one of the core concepts in social cognitive theory. It is defined as an individual's level of confidence and belief in accomplishing a specific task, a belief that he or she can achieve goals and overcome difficulties. The concept of self-efficacy profoundly shapes an individual's behaviors, thinking, and emotions, influencing their performance in various domains (Rogers, 2019). Self-efficacy significantly influences athletes' goal setting and pursuit. Athletes with high self-efficacy often establish ambitious goals and show greater willingness to exert effort in their pursuit (Zhan, 2019). This level of self-efficacy not only improves an individual's motivation, but also enables them to better cope with the stress and competition of the game. Individuals with high self-efficacy are more likely to try and persist in achieving goals in the face of difficulties. In contrast, individuals with low self-efficacy may be more likely to give up due to frustration. An individual's level of self-efficacy also influences the goals they set. Individuals with high self-efficacy are more likely to set more challenging and attainable goals. Self-efficacy is also closely related to emotional state. A more positive emotional state usually accompanies high self-efficacy, whereas low self-efficacy can lead to depression and anxiety.

In this study, self-efficacy theory can be used to explain and explore how coaching affects athletes' self-efficacy. Through mentoring, motivation, providing support, and positive feedback, coaches can shape an athlete's confidence and belief in their ability to succeed in tennis. By understanding players self-efficacy in different contexts, coaches can provide targeted psychological support to help them overcome difficulties, increase confidence, and improve their level of performance in the game. Coaches can set reasonable goals and train programmers according to the athletes' self-efficacy level to motivate them to fulfill their potential better and improve their overall self-efficacy. Hence, this paper aimed to investigate if tennis coaching can strengthen the confidence of player in improving confidence, social skills and decision-making skills.

Research Questions

To give light to the problem, the researchers sought to answer the influence of the coaches on the self-efficacy of Tennis athletes.

1. What is the tennis athletes’ performance level when group as to:
    1.1 Institutional;
    1.2 Regional;
    1.3 National; and
    1.4 International?
2. What is the level of efficacy of coaches’ and athletes when grouped as to:

2.1 Confidence;
2.2 Social Skills; and
2.3 Decision-Making Skills?

3. Is there a significant difference in the coaches and athletes' self-efficacy in terms of:
3.1 Confidence;
3.2 Social Skills; and
3.3 Decision-Making?

4. Is there a significant relationship between coaches' and athletes' self-efficacy in terms of?
4.1 Confidence;
4.2 Social Skills; and
3.3 Decision-Making?

Research Hypotheses

Based on the research questions posted, the following hypotheses

Ho1: There is no significant difference in the coaches' and athletes' self-efficacy in terms of confidence; social skills; decision-making.

Ho2: There is no Is there a significant relationship between coaches' and athletes' self-efficacy in terms of confidence; social skills; decision-making.

METHODOLOGY

Research Design

This study used quantitative research. It involved the collection, processing, testing and analysis of information in order to draw meaningful conclusions. Survey research, an important tool in various quantitative research approaches, involves administering questionnaires to respondents to collect data.

Research Locale and Participants

The respondents for this study came from the total of 1200 tennis athletes in Asia, and a sample size of 300 served as the respondents of the study while 50 coaches willingly joined the investigation.

Research Instrument

The researcher-made questionnaire undergo validation with 5 experts in the field physical education. The coaches' self-efficacy questionnaire was used, which was divided into two parts. The coaches' profile and coaches' self-efficacy. Self-efficacy included, social skills, and decision-making skills. The athletes' questionnaire was divided into two parts. The athlete's profile and the athlete self-efficacy, social skills and decision-

making skills. The last part deals on coaches and athlete' performance. After getting the validity, a reliability test was conducted 20 persons who are not part of the actual respondents.

Data Gathering Procedure

The instrument assessed for validity and reliability using Cronbach Alpha. After an excellent result was obtained the necessary permission from the university president to conduct the study to the athletes. Samples were randomly selected from the target population using appropriate statistical methods during the data collection stage. Data collection and processing procedures were carefully planned to ensure the accuracy and reliability of the data. Subsequently, quantitative data analyses were conducted.

Data Analysis

The study follows the ethical standard of research. After gathering all the data, the researchers used the Weighted Mean. Frequency and Percentage, ANOVA and Pearson Product Moment of Correlation was used.

RESULTS

This part includes the discussion of results.

Table 1 *Computed Weighted Mean and standard deviation on the Level of Tennis Athletes' Performance*

	Mean	SD	VI
Institutional	2.50	.85	High
Regional	2.22	.94	Low
National	1.80	.99	Low
International	1.74	1.00	Very Low
Over all	2.00	.94	Low

Note. Scale 1.00-1.74 Very low; 1.75-2.49 Low; 2.50-3.24 high; 3.25-4:00 very High

Table 2 *Computed Weighted Mean and standard deviation on the Level of Efficacy of Coaches and Athletes*

COACHES	Mean	SD	VI
Confidence	3.72	.30	Very High
Social Skills	3.68	.26	Very High
Decision-Making	3.78	.19	Very High
Over All	3.72	.25	Very High

ATHLETES	Mean	SD	VI
Confidence	2.86	.30	High

Social Skills	3.11	.26	High
Decision-Making	2.92	.09	High
Over All	2.96	.22	High

Note. Scale 1.00-1.74 Very low; 1.75-2.49 Low; 2.50-3.24 high; 3.25-4:00 very High

Table 3 *Differences in the Level of Self-Efficacy when they are grouped according to coaches and athletes, confidence, social skills and decision making*

INDICATORS	Group	Mean	SD	T-value	P-value	Ho	VI
Confidence	coaches	3.72	.17	2.423	.01	Rejected	Significant
	athletes	2.83	.11				
Social Skills	coaches	3.68	.17	1.696	.09	Accepted	Not Significant
	athletes	3.11	.09				
Decision Making	coaches	3.78	.20	2.322	.02	Rejected	Significant
	athletes	2.92	.09				

Table 4 *Significant Relationship on the efficacy of coaches' and athletes' when grouped as confidence, social skills, decision making*

		Coaches' Confidence	Coaches' Social Skills	Coaches' Decision-Making	Coaches' Self-Efficacy
Athletes' Confidence	**r**	0.87	0.22	0.69	0.74
	sig	0.05	0.72	0.20	0.15
	Ho	Rejected	Accepted	Accepted	Accepted
	VI	Significant	Not Significant	Not Significant	Not Significant
Athletes' Social Skills	**r**	0.90	0.40	0.81	0.87
	sig	0.04	0.50	0.10	0.05
	Ho	Rejected	Rejected	Accepted	Rejected
	VI	Significant	Significant	Not Significant	Significant
Athletes' Decision Making	**r**	0.74	0.41	0.71	0.76
	sig	0.16	0.49	0.18	0.13
	Ho	Accepted	Accepted	Accepted	Accepted
	VI	Not Significant	Not Significant	Not Significant	Not Significant
Athletes' Self-Efficacy	**r**	0.93	0.35	0.80	0.86
	sig	0.02	0.56	0.10	0.06
	Ho	Rejected	Accepted	Accepted	Accepted
	VI	Significant	Not Significant	Not Significant	Not Significant

DISCUSSION

Table 1 presents the statistical results specifically the weighted mean and the standard deviation of the tennis athletes' performance at the institutional, regional, national, and international levels. The highest mean was their institutional performance with a weighted mean of 2.50 at high performance and the lowest mean was the international level with a weighted mean of 1.74 as a very low performance. Wang, et al. (2019) found that achieving good rankings in interscholastic competitions is closely related to individual skill level, match experience, and tactical use. Excellent rankings usually indicate that athletes have achieved significant success in intramural competitions, which can enhance their self-efficacy. Pilus and Saadan (2019) studied that higher weekly training hours were positively associated with athletes' skill level and match performance. Over the long term, high-intensity training contributes to improved skill levels, endurance, and competition adaptability. This is consistent with the higher mean values in this indicator, suggesting that athletes are more invested in in-school training. Liu et al. (2023) showed that these honors could increase an athlete's self-esteem and self-efficacy, affecting his/her future performance. Therefore, high mean values of this indicator are associated with positive achievement motivation in athletes. Gall et al. (2021) found that experienced athletes are more likely to perform well in high-pressure situations. Therefore, the medium mean for this indicator reflects some competitive experience for participants in intramural leagues.

Table 2 presents the level of efficacy of coaches and athletes. The coaches highest weighted mean was decision making and the lowest weighted mean was social skills, still all are in the very high level. For the tennis athletes, the highest means was 3.11 the social skills and the lowest mean was confidence at 2.86 all in High level. Over all mean for coaches was 3.72 as very high level and 2.96 for tennis athletes as high level. Mageau (2019) showed that coaches' confidence and trust in their teaching methods directly affect athletes' learning and skill enhancement. When coaches are confident in their approach, they are more effective in imparting knowledge and skills, improving athletes' overall performance. Coaches also showed very high level of confidence in "I am confident that I can handle difficult situations." This is consistent with the day-to-day demands on coaches to deal with the challenges and pressures of competitive sports. Tschannen et al. (2020) showed that having the confidence to deal with stressful and difficult situations enhances a coach's leadership and team management skills. Mageau (2019) showed that coaches' confidence and trust in their teaching methods directly affect athletes' learning and skill enhancement. When coaches are confident in their approach, they are more effective in imparting knowledge and skills, improving players' overall performance. The study by Demers et al. (2020) showed that individualized training programmers based on the performance and needs of the players are essential in improving the skill level and overall performance. The indicators in the Table emphasize the confidence and competence of coaches in this regard. In sports, unexpected situations and emergencies occur between rapid changes.

The coach's ability to make the right decisions quickly in these situations is critical to the success of the team (Jones, 2020). Gao & Yang (2022) showed that an athlete's

confidence in his or her skills is closely related to his or her performance in competition. Athletes with high self-efficacy are more inclined to set higher goals, face challenges more positively, and better maintain their composure when faced with stress (Jowett, 2021). Therefore, the results reflect that athletes maintain a high level of confidence in all aspects of the game, which positively affects their performance in competition. Myers et al. (2020) showed that maintaining positive competitive relationships and respect helps to increase athletes' motivation to play, making them more competitive and confident in defeating their opponents. Rodriguez et al. (2021) concluded that harmony and cooperation within a team are essential to improve the team's performance. Good social skills can lead to better conflict management among team members and ensure harmonious team functioning.

Table 3 presents the significant difference on the level of self-efficacy of coaches and athletes when grouped as to confidence and decision making with p value of .01 and .02 which is significant. Social skills at .09 not significant. Coaches showed significant strengths in self-confidence and decision-making ability. These findings provide useful information for developing individualized training programmers and improving team effectiveness. Brackenridge (2021) showed that coaches' self-efficacy is strongly related to athletes' performance and team success, as athletes tend to be positively influenced by coaches' confidence. Coaches are more self-confident in establishing effective communication and teamwork. Good social skills are essential for team cohesion and collaboration among athletes, which is widely supported in past research (Balague, 2019). Findings in terms of decision-making skills reveal that coaches are more confident and better at making key decisions quickly during games. This is consistent with coaches taking on strategic leadership roles in games, whereas athletes focus more on execution and individual decision-making (Cushion et al., 2019).

Table 4 shows the relationship between coaches' and athletes' self-efficacy in terms of confidence, social skills, and decision-making ability. These relationships are presented through correlation coefficients (r) and significance levels (sig). In terms of confidence, the relationship between coaches and athletes was not statistically significant, meaning there was no significant association between the confidence levels of coaches and athletes in this study. However, there was a significant relationship between coaches and athletes in terms of social skills and decision-making skills, suggesting some correlation between coaches' and athletes' levels of self-efficacy in these two areas. There was a significant positive correlation between coaches and athletes in terms of self-efficacy. Specifically, the correlation coefficients (r) between coaches' self-efficacy and athletes' self-efficacy were 0.86 and 0.74, respectively, and the p-values under each indicator were less than 0.05, indicating that these correlations were significant. This indicates that the level of coach's self-efficacy is closely related to the level of athlete's self-efficacy, and it is possible that the coach's confidence, social skills, and decision-making ability have a certain influence and contribute to the athlete's self-efficacy.

In terms of social skills, although there is also a positive correlation between coaches' and athletes' social skills, the correlation is not significant. Although the correlation

coefficient is 0.40, the p-value is greater than 0.05, This could mean that the level of social skills of the coach does not directly affect the level of social skills of the athletes.

In terms of decision-making skills, not significant. The correlation coefficient is 0.71, the p-value is greater than 0.05, This suggests that the level of the coach's decision-making ability influence on the athletes' decision-making ability. Research on decision-making skills has emphasized the importance of coaches' decision-making in competition for athletes' performance (Liang & Xu, 2023). The coach's level of decision-making not only affects the athlete's confidence, but is also directly related to the team's success (Courneya & Chelladurai, 2021).

In terms of self-efficacy, the relationship between coaches and athletes was also significant. The correlation coefficient was 0.86, there was a relationship between a coach's and an athlete's self-efficacy.

These results have important implications for understanding the interactions and influences between coaches and athletes. They can help provide insight into how overall team performance can be improved by increasing levels of self-efficacy in specific areas. Although coaches' and athletes' self-efficacy were generally correlated, there were differences in specific aspects. This suggests that the interactions between coaches and athletes may differ across different aspects of self-efficacy, which requires more in-depth research and understanding.

Conclusions

Based on the study's findings, the researcher came up with the following conclusions. At institutional, regional, national, and international levels, tennis players demonstrated high, low and very low competitiveness levels across different playing performances. Coaches demonstrate high levels of confidence, social skills and decision-making, showing a wealth of expertise and skills in teaching and match management. Athletes demonstrate high levels of confidence, social skills, decision-making ability, showing that they have strong confidence in their abilities and can participate actively and make informed decisions within the team. Coaches were significantly higher than athletes in confidence, social skills, and decision-making ability due to their professional background and leadership roles. Therefore, hypotheses number 1, on confidence and decision making was rejected, while on social skills is accepted. By analyzing the relationship between coach and athletes' self-efficacy, they found congruence between the two in terms of self-efficacy and decision-making. Therefore, hypotheses No 2 on coaches and athletes' confidence and social skills was rejected, while on decision making and self-efficacy hypotheses was accepted. This provides important clues for an in-depth study of coach-athlete interactions, influences, and training programmers.

Recommendations

Based on the conclusions derived from this study, the following are the recommendations:

The School Administrators should analyze the performance of tennis athletes and coaches, more effective training and development strategies can be formulated for a successful training program.

The Physical Education Teachers. It is recommended that regular capacity-building training be conducted, particularly in the areas of confidence, social skills, and decision-making ability. Improving the coaching team's overall quality will help guide and develop better players.

The Tennis Athletes an individualized development plans be developed for each athlete. Programs should be based on athletes' level of performance at the international, national, regional, and institutional levels, focusing on their weaknesses and providing targeted technical, tactical, and psychological training.

The Future Researchers. To enhance tennis athletes' performance on the international stage, it is recommended that sports organizations actively promote international exchange and cooperation. By participating in international training programs and exchange activities, players can be exposed to different levels of competition and improve their international competitiveness.

Compliance with Ethical Standards

The researchers sought an approval from the university administrators/heads. After the approval, getting the permission from the coaches, trainers' and athletes to conduct the questionnaire. The researchers guaranteed that all the data gathered from the respondents remained confidential. Moreover, trust which implies that the respondents should be protected all the time.

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KATANGIAN AT KASANAYAN SA PAGGAMIT NG MGA APLIKASYONG PRODUCTIVITY SOFTWARE NG MGA MAG-AARAL SA KOLEHIYO

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ABSTRACT

Nakatuon ang pag-aaral na ito sa pagtukoy sa makabuluhang kaugnayan ng katangian at kasanayan ng mga mag-aaral sa paggamit ng mga aplikasyong productivity software. Isa rin sa mga layunin ng pag-aaral ang pagbuo ng isang panukalang proyekto kaugnay ng resulta ng pag-aaral. Sa pamamagitan ng pananaliksik na ito, nais ng mananaliksik na maunawaan ang mga katangian ng mga mag-aaral na nagpapakadalubhasa sa Filipino sa konteksto ng kanilang kasanayan sa paggamit ng aplikasyong productivity software. Mga mag-aaral mula sa ikalawang taon hanggang ikaapat na taon sa isang pampublikong pamantasan ang mga sangkot sa pag-aaral na ito. Buong enumerasyon ng mga mag-aaral ang ginamit bilang populasyon sa isang sarbey. Sa kabuoan, 212 mag-aaral ang naging bahagi ng pananaliksik na nakapagbigay ng 100% retrieval rate sa pag-aaral. Nakatuon sa disenyong descriptive-correlational ang pag-aaral upang maipakita ang mga katangian ng mga mag-aaral at ang kaugnayan nito sa kanilang kasanayan sa teknolohiya. Lumalabas sa resulta ng pananaliksik na may makabuluhang kaugnayan ang aspektong akademiko sa kaalaman, kakayahan, at kaasalan bilang mga antas ng kasanayan sa paggamit ng nasabing aplikasyon. May makabuluhang kaugnayan din ang aspektong nabigasyong panteknolohiya sa mga nabanggit na antas ng kasanayan. Samantala, nakabuo ng isang panukalang proyekto ang pananaliksik sa pamamagitan ng isang sanayang-aklat. Nagtulak naman ang resulta ng pag-aaral sa mga rekomendasyon tulad ng pagpapaiting at pagtutok sa pagtuturo ng teknolohiya sa Filipino at pagpapalakas pa ng kaalaman sa aspektong teknikal ng mga mag-aaral.

Keywords: *Teknolohiya sa Kolehiyo, Nagpapakadalubhasa sa Filipino, Katangian sa Teknolohiya, Antas ng Kasanayan sa Teknolohiya, Aplikasyong Productivity Software*

INTRODUCTION

Paggamit ng mga aplikasyong kaugnay ng productivity software ang isa sa mga mahahalagang aspekto ng edukasyon sa kasalukuyang panahon. Hindi na ito nakapagtataka dahil sa modernisasyon at pagpapabilis ng proseso sa pag-aaral. Nagbibigay ito ng mga kahusayan at kaginhawahan sa pagtuturo at pag-aaral, na kung saan ito nagbibigay-daan sa mas malawak na pag-unawa at kahusayan sa pagtuturo.

Sa artikulo ng Forbes Magazine na isinulat ni Loubier (2024), sinasabing nasaksihan ng buong mundo ang mga pagsulong sa teknolohiya na unti-unting tumutulong sa mas madali, mas maginhawa, mas mabuti, at mas kawili-wiling pang-araw-araw na buhay. Sa ika-21 siglo, gumawa ng napakalaking pagbabago ang teknolohiya. Ilan dito ang pag-usbong ng mga aplikasyong nakasentro sa augmented reality, blockchain, artificial intelligence, at 3D printing na ilan lamang sa mga halimbawa ng mga pinakabagong imbensyon.

Taong 2013 isinabatas naman ni Pangulong Benigno Aquino III ang K to 12 Curriculum Program. Bukod sa dagdag na taon sa Basic Education Program sa bansa mapagbubuti nito ang akademikong kompetensi at oportunidad sa paggawa ng mga Filipinong magsisipagtapos. Kabilang sa kompetensi ng 21st century skills ang information, media and technology skills. Kasanayan itong kailangang makamit ng mga mag-aaral upang makasabay sa hamon ng buhay sa kasalukuyan.

Sa pakikipagtulungan sa Information Technology and Business Process Association of the Philippines, lumagda sa isang memorandum ang Komisyon ng Lalong Mataas na Edukasyon para mabigyan ng kaukulang kasanayan sa information technology ang mga mag-aaral sa kolehiyo. Ayon kay Komisyoner Prosero de Vera III, patunay ang paglalagda sa nasabing memorandum ng utos ni Pangulong Marcos kaugnay ng mas mataas na digitisasyon ng bansa.

Sa kasalukuyan, maraming mga paaralan at institusyon ang gumagamit pa rin ng mga makabagong teknolohiya sa pagtuturo at pag-aaral. Ang tradisyonal na pamamaraan sa pagtuturo, bagama’t buhay pa rin unti-unti nang napapalitan ng modernong pamamaraan. Ayon nga kay Filomen at Perez (2000), sa modernong pagtuturo at teknolohikal na pagbabago sa ika-21 siglo, nakatuon sa kompetisyon ang mga paaralan. Kaya naman marami sa mga ito ang gumagamit na ng mga makabagong kagamitan sa kanilang pagtuturo. Ang simpleng yeso at pisara na gamit noon ng mga guro sa pagtuturo, napapalitan na ng kompyuter at LCD projector sa pagtalakay ng kanilang paksa.

Sa pag-aaral na isinagawa ni Delos Reyes (2019) na may pamagat na The Role of ICT to Make Teaching-Learning Effective in Higher Institutions of Learning, napatunayan ang mabisang integrasyon ng teknolohiya sa mga praktika sa silid na naging isang hamon sa mga guro at administrador ng paaralan. Natuklasan sa pag-aaral na mabisa ang Information and Communication Technology (ICT) lalo na ang integrasyon

ng e-learning, e-communication, mabilis na pag-akses ng impormasyon sa internet, online student registration, online advertisement, at nababawasan ang pagpiprint ng mga sipi ng aralin at iba pa. Dagdag pa, nakasaad sa Seksiyon 6.2 ng pangkalahatang program outcomes ng Bachelor of Secondary Education ang paggamit ng mga kasanayan sa pagpapaunlad at pagsasagawa ng ICT para pagpapakilala ng de-kalidad, mahalaga, at makataong praktika sa propesyon ng pagtuturo.

Hindi maikakaila ang kahalagahan ng pagkakaroon ng malawak na kaalaman at kahusayan sa paggamit ng mga impormasyon mula sa midya at paggamit ng teknolohiya na isa ring karagdagan at napakalaking hamon para sa mga guro sa Filipino lalo pa't ang mga mag-aaral sa kasalukuyan talagang sanay na sanay sa paggamit ng teknolohiya bilang bahagi ng kanilang pang- araw-araw na buhay. Bilang guro sa ika-21 siglo inaasahan ang paggamit ng teknolohiya bilang bahagi ng kanilang pagtuturo sa pamamagitan ng paghahanap ng iba"t ibang Learning Management System (LMS) na ginagamit sa pagtuturo at pagkatuto tulad ng Moodle, Edmodo, Blackboard, Google Classroom, Schoology, Canvas, at Gooru, interaktibong gawain at iba pang mga gawain mula sa internet gamit ang teknolohiya.

Sa pag-aaral ni Pilorin (2020), napatunayan na ang kakulangan ng kaalaman sa paggamit ng teknolohiya maaaring makaapekto sa iba pang kasanayan. Ang pag-aaral nagpatunay na maaaring maapektuhan ang mga mag-aaral sa kanilang pag-aaral sa negatibong paraan. Ang kakulangan sa kaalaman sa teknolohiya gaya ng kompyuter maaaring makasama sa mga mag-aaral sa larangan ng kalusugan o pag-aaral. At dahil dito, ninais ng mga mananaliksik na malaman ang antas o lebel ng kasanayan ng mga mag-aaral na nagpapakadalubhasa sa asignaturang Filipino sa paggamit ng Teknolohiya ng Komunikasyon at Impormasyon. Sa ganitong paraan, malalaman kung nakatutugon ba ang mga mag-aaral sa tawag ng pangangailangan sa ika-21 siglong kasanayan.

Sa isang artikulo na isinulat ni Riutzel (2018) sa ABC News, lumabas sa pag-aaral na nagiging hadlang ang mga cellphone at laptop na ginagamit sa isang klasrum. Bilang karagdagan, lumalabas sa mga bagong pag-aaral na ang iba pang electronic devices ang nakapagpapababa ng marka ng isang estudyante. Kaya't sa kasalukuyang panahon, maraming mga mag-aaral ang hindi pa ganap na nakakamit ang kahusayan sa paggamit ng teknolohiya. Sa kanilang kabatiran, maraming teknolohiya ang nakapaligid sa kanila, subalit hindi nila ito maunawaan at mahawakan.

Kagaya nga ng sinabi ni Anderson (2021) sa kaniyang pag-aaral, dahil sa kawalan ng kakayahang magmanipula ng mga teknolohiya sa kompyuter, hindi nila magamit ito sa kanilang pang-araw-araw na buhay at sa kanilang pag-aaral. Dagdag pa rito, napapansin ng mga mag-aaral ang pagkakaroon ng kalidad sa paggamit ng teknolohiya sa pagtuturo. Nagiging maganda ang kalidad ng pagtuturo at nakakatugon ito sa mga pangangailangan ng mga mag-aaral. Sa pamamagitan ng paggamit ng mga modernong teknolohiya sa pagtuturo, lalong napapadali ang proseso ng pag-aaral at mas nahahasa ang mga mag-aaral sa pagsasanay ng kaalaman.

Mula naman sa inilabas na report ng Instructure sa 2023 State of Student Success & Engagement in Higher Education, lumalabas na karamihan sa mga mag-aaral sa kolehiyo ang naniniwalang kakabit ng kanilang pagkakaroon ng tagumpay ang pagkakaroon ng akses sa maayos na teknolohiya. Sa pagkakataong ito, naglayon ang pag-aaral na itong tuklasin ang mga paggamit ng teknolohiya ng mga mag-aaral na nagpapakadalubhasa sa Filipino.

Sa pagkalap ng mga datos hinggil sa katangian at kasanayan ng mga mag-aaral sa paggamit ng mga aplikasyong productivity software, pinatutunayang magkaugnay ang dalawang perspektiba sa kung paano lumalaganap ang pag-unlad sa pagtuturo. Dahil dito, mas nagkakaroon ng kalinangang naikikintal sa mga nagiging mag-aaral lalo na sa paggamit ng makabagong teknolohiyang makikita sa paaralan.

Pinatunayan sa pag-aaral nina Akbulut, Y., & Cardak, C. S. (2017), Santos, S., & Tortoles, H. (2017), Choi, H. J., & Johnson, S. D. (2018), at Albano, K. M., & Aguto, O. K. (2021) na may malaking papel na ginagampanan ang teknik at pamamaraan ng guro sa pagtuturo lalo pa kung ito kaaangkupan ng mga makabagong teknolohiya. Inihalintulad din ang perspektibang ito ayon sa pag-aaral nina Dalipi, F., Kabashi, A., & Sindonez, S. (2018), Toring, H., & Demisana, J. (2018), Hsieh, P. H., & Cho, Y. C. (2017), at Huang, R., Tlili, A., Chang, T. W., Nascimbeni, F., & Burgos, D. (2020) na nagsasabing malaki ang epekto ang guro sa mga mag-aaral na mayroong mga natatanging kakayahan na dapat mas pag-ibayuhin.

Ang kanilang pag-aaral may malaking pagkakahawig sa pag-aaral na isinagawa nina Ravuzo, C., Li, H., Sabido, L., & Geng, Y. (2020), Bozkurt, A., Akgün-Özbek, E., & Zawacki-Richter, O. (2018), Potalo, J., & Gapas, E. (2019), at Clarino, C., Delumen, Y., & Chiang, Y. (2021) na nagpapatunay ring malaki ang kaugnayan ng mga pamamaraang ginagamit ng guro sa pagtuturo gamit ang mga makabagong teknolohiya sa pagkatuto ng mga mag-aaral.

Dagdag pa nito, lumabas naman sa pag-aaral nina Karimi, R., & Valladolid, V. (2017), Patellar, P. A., Sweller, J., & Domingo, R. E. (2018), Huelar, C., Paridal, S., & Cozar, J. (2018), at Noval, W., Ramirez, W., Pamintuan, J., & Desura, D. (2018) na mas nagkakaroon ng mataas na kawilihan ang mga mga mag-aaral na makinig at matuto sa talakayan kung lalapatan ng guro ang kanyang pagtuturo ng mga makabagong pamamaraan.

Sinang-ayunan din ito ng isinagawang pag-aaral nina Gane, G., & Jarabejo, Y. (2017), Lo, C., & Manalo, M. K. (2018), Ambyuduzar, M. L., & Zolis, V. (2018), at Cabral, Y., Li, H., & Kapuno, C. (2017) na nagsasabing madaling makuha ang atensiyon ng mga mag-aaral kung ang guro mayroong kaalaman kung paano gumamit ng mga makabagong teknolohiya sa pagtuturo. Sa tulong nito nagkakaroon ng interes ang mag-aaral tungkol sa paksang tinatalakay.

May pagkakaiba ang kasalukuyang pananaliksik sa pag-aaral ni Lee, H., & Lim, Y. (2020) at Dartillo, G., & Wulek, P. (2019) dahil ito nakatuon sa pagtuklas ng mga

panibagong kaalaman at estratehiya sa pagtuturo sa pamamagitan ng pananaliksik samantalang ang kasalukuyang pag-aaral binibigyang-diin ang antas ng kasanayan ng mga mag-aaral sa paggamit ng mga makabagong teknolohiya.

Ang kasalukuyang pananaliksik naiiba rin sa isinagawang pag-aaral ni Punzalan, Y., & Heraldo, Y. (2017) at Alghamdi, S., & Junus, M. (2020) dahil kinokonsidera nito ang mga demograpik propayl ng mga mag-aaral bilang mahalagang salik ng kanilang kasanayan sa paggamit ng mga makabagong teknolohiya samantalang mas binibigyang-pansin lamang ng pag-aaral ni Punzalan, Y., & Heraldo, Y. (2017) ang pagkakaroon ng kasiglahan sa loon ng silid-aralan kung gagamit ng mga makabagong teknolohiya sa pagtuturo at pagkatuto.

Tuon naman ng pag-aaral nina Smith (2019), Garcia at Lee (2023), Punzalan (2020), Patel at Ngunyen (2018) at Kim (2018) ang mabisang paggamit ng mga productivity software sa lalong pagpapaunlad ng kakayahan sa teknolohiya. Kaugnay naman nito ang mga pag-aaral nina Smith (2018), Wang (2019), Patel at Jones (2021), Garcia (2017), at Kim at De Quiros na nakasentro sa pagsasagawa ng pagtataya at pagsukat sa kasanayan ng mga mag-aaral na nakadepende sa resulta ng kanilang dati at kasalukuyang kaalaman sa productivity software.

Ang kasalukuyang pag-aaral natatangi dahil ang mananaliksik gagamit ng hindi lamang isang kagamitang estadistika, sapagkat maliban sa pag-aaral ng katangian ng mga mag-aaral ayon sa iba’t ibang aspekto at kanilang kasanayan sa paggamit ng teknolohiya, ninanais din nitong mabatid kung may makabuluhang kaugnayan ang dalawang nabanggit.

Research Questions

1. Ano-ano ang mga katangian ng mga mag-aaral ayon sa sumusunod na aspekto:
    a. akademiko
    b. nabigasyong panteknolohiya?
2. Ano ang antas ng kasanayan ng mga mag-aaral sa mga aplikasyong productivity software
   batay sa:
    a. kaalaman
    b. kakayahan
    c. kaasalan?
3. May makabuluhang kaugnayan ba ang mga katangian ng mga mag-aaral sa antas ng
   kanilang kasanayan sa mga aplikasyong productivity software?
4. Ano ang sanayang aklat na maipapanukala batay sa kinalabasan ng pag-aaral?

METHODOLOGY

Gumamit ang pag-aaral na ito ng descriptive-correlational design bilang dulog sa pananaliksik. Naglayong ilarawan ang katangian ng mga mag-aaral ayon sa aspektong sosyo-ekonomiko, akademiko, at kakayahang panteknolohiya.

Ginamit din ang deskriptibong disenyo sa paglalarawan ng antas ng kasanayan sa paggamit ng mga aplikasyong productivity software ng mga mag-aaral batay sa kaalaman, kakayahan at kaasalan. Samantala, ginamit ang correlational upang mabatid ang makabuluhang kaugnayan ng katangian ng mga mag-aaral sa particular na aspekto sa antas ng kasanayan sa paggamit ng mga aplikasyong productivity software.

Binubuo ang mga respondiyante ng pag-aaral na ito ng mga mag-aaral mula ikalawang taon hanggang ikaapat na taon sa kolehiyo na nagpapakadalubhasa sa asignaturang Filipino ng isang pampublikong pamantasan. Ginamit ng mananaliksik ang kabuoang enumerasyon ng populasyon. Nangangahulugang lahat ng mag-aaral sa nasabing antas na nakaenrol sa pamantasan ang lahat ng kalahok sa pag-aaral na ito.

Kung pagbabasehan ang bilang ng mga kalahok, binubuo ng pitumpu't walong (78) respondiyante ang BSED-2 Filipino. May animnapu't pito (67) namang kalahok mula sa BSED-3 Filipino. Samantala, sangkot ang animnapu't pito (67) ring mag-aaral mula sa BSED-4 Filipino. Tinatayang umiikot ang kabuoang bilang ng mga respondiyante sa pag-aaral na ito sa dalawandaan at labindalawa (212). Mula sa kabuoang bilang na ito, nagkamit ang mananaliksik ng sandaang bahagdan (100%) na retrieval rate mula sa isinagawang sarbey.

Nakalap din ang mananaliksik ang ilang datos kaugnay ng katayuang sosyo-ekonomiko ng mga respondiyante. Kung pagtutuonan ang bilang ng pamilya, lagpas sa kalahati (51.90%) ang nagsabing apat hanggang anim silang sama-sama sa isang bahay. Pito hanggang siyam na miyembro naman mayroon ang tahanan ng 35.86% sa mga respondiyante. sinusundan naman ito ng may isa hanggang tatlo (8.03%), may 10 hanggang 12 miyembro (3.31%), at pinakakaunti (1.00%) ang nagsabing tinatayang 13-15 miyembro sila ng isang residensiya.

Sa parehong bilang ng respondiyante, kapansin-pansin na karamihan (35.83%) ang sumagot na nasa pagitan ng ₱ 4,000.00 at ₱ 7,000.00 ang kanilang gastusin. Pumapangalawa naman dito ang 26.42% ng mga respondiyante na nasa pagitan ng ₱ 10,000.00 - ₱ 20,000.00 ang buwanang gastos. Halos magkasing dami naman ang nagsabing ₱ 1,000.00 - ₱ 3,000.00 (16.51%) at ₱ 7,000.00 - ₱ 9,000.00 (14.16%) ang nagagamit na badyet ng kanilang pamilya. Samantala, 15 (7.08%) sa mga respondiyante ang ipinuntong nasa ₱ 25,000.00 - ₱ 35,000.00 ang buwanan nilang gastos.

Mataas ang bilang (43.87%) ng mga respondiyanteng hindi nakapag-aral ang mga magulang. Lagpas sangkapat naman (27.83%) ang sinabing elementarya at/o

sekondarya ang natapos ng kanilang magulang. Nakapagtapos naman ng digri sa antas tersiyaryo ang ilan (14.62%) sa mga magulang ng mga mag-aaral. Nasa 20 (9.43%) naman ang bokasyonal ang naabot ng mga magulang. Panghuli 4.25% sa mga respondiyante ang may magulang na nasa antas masterado at/o doktorado.

Sa resulta din ng sarbey, halos tatlongkapat (73.11%) ng mga respondiyante ang nagsasabing may tatlo hanggang apat na appliances sila sa kanilang bahay. Hindi naman nalalayo ang nabilang ang kanilang kagamitan sa pagitan ng isa hanggang dalawa (9.91%) at lima hanggang anim (12.74%). Pito (3.30%) sa mga respondiyante ang sumagot na may pito hanggang walo silang kagamitan. Samantala, dalawa (0.94%) ang nagsabing may siyam hanggang 10 silang kagamitan sa bahay.

Halos kalahati (47.64%) ng mga sumagot sa sarbey ang may iisang gadget lamang na ginagamit sa pag-aaral. May 44 (20.75%) naman sa 212 na respondiyante ang may dalawang gadget na ginagamit. Sa kabilang dako, sumusunod naman ang 16.04% na sumagot na may tatlong gadget silang kasalukuyang ginagamit. Magkasalungat naman ang sumunod na ibang sagot sa sarbey. Ipinapakita na may 14 (6.61%) sa mga respondiyante ang walang anumang gadget sa pag-aaral samantalang 11 (5.19%) ang nagsabing may apat silang gadget na ginagamit. Dagdag pa sa resulta, 3.77% o 8 sa 212 respondiyante ang may limang gadget sa kasalukuyan.

Sa kabilang banda, nakalap din ang mananaliksik ang ilang datos kaugnay ng buhay sa akademikong aspekto ng mga respondiyante. halos magkasindami (36.32% at 38.80%) ang nagsabing sa pagitan ng 25-27at 28-30 ang bilang ng yunit na kanilang kasalukuyang kinukuha. Pumapangalawa naman sa datos na ito ang nagsabing nasa pagitan sila ng 22-24 na yunit ang kinukuha (11.79%). Hindi rin nalalayo rito ang kasalukuyang kumukuha ng bilang ng yunit na 19-21 (11.32%). Sa kabilang dako, walo sa 212 na respondiyante (3.77%) ang kumukuha lamang ng 16-18 na bilang nay unit o ang tinatawag na underload. Sa natamong resulta, wala namang nagsabing lagpas sa 30 yunit ang kanilang kinukuha o ang tinatawag na overload.

Ang kinalabasan ng resulta nagpapakita ng 40.57% o 86 sa 212 respondiyante ang nagsabing nag-aaral sila sa loob ng 10-11 oras sa isang araw. Pinapangalawahan naman ito ng mga sumagot ng gumugugol sila ng walo hanggang siyam na oras sa pag-aaral na bumuo sa 27.83%. Anim hanggang pitong oras naman ang pag-aaral ng 42 (19.81%) sa mga respondiyante. Panghuli, 25 sa 212 o 11.79% ang gumugugol lamang ng apat hanggang limang oras sa isang araw para mag-aral.

Halos kalahati (46.70%) o 99 sa 212 ng mga respondiyante ang nagsasabing sobrang nahihirapan sila sa mga aralin. Sa kabilang dako, 36 sa 212 o 16.98% ang sobrang nadadalian. May 15.57% (33 sa 212) ang ipinuntong madali para sa kanila ang mga aralin. Samantala, 24 sa 212 o 11.32% naman ang nagsabing may kahirapan ang kanilang mga aralin. Katamtaman naman ang sagot ng 20 sa 212 (9.43%).

Lagpas sa kalahati (60.38%) o 128 sa 212 na respondiyante ang kumakausap sa 4-5 katao. May 35 sa 212 naman o 16.51% ang kinukonsulta ang 2-3 tao sa kaniyang paligid. Sinusundan naman ito ng 9.91% o 21 sa 212 ng mga respondiyante na

nagsasabing wala o isang tao lamang ang kaniyang kinokunsulta. Anim hanggang pitong tao naman ang nakakausap ng 14 sa 212 (6.60%) mga kalahok sa pananaliksik. Nasa 12 (5.66) ang nagsabing komukonsulta sila sa walo hanggang siyam na tao. At, dalawang kalahok (0.94%) ang nagsabing 10 hanggang 11 ang kanilang konukonsulta sa pag-aaral.

Ginamit bilang instrumento sa pananaliksik ang talatanungan o survey questionnaire. Pinagkunan ng mananaliksik ang 2020 EDUCAUSE Student Technology Survey mula sa EDUCAUSE Center for Analysis and Research sa ilalim ni Andy Brantley. Nagsisiyasat ang survey na ito tungkol sa mga karanasan at saloobin sa teknolohiya ng isang mag-aaral sa kolehiyo. Ginamit ito upang maunawaan ang mga akademikong karanasan sa teknolohiya. Layunin din nitong maunawaan kung paano gamitin ang teknolohiya nang mas epektibo upang makinabang ang mga mag-aaral.

Isinaalang-alang ng mananaliksik ang maayos na etika sa pagkakaroon ng akses sa nabanggit na talatanungan. Nagpadala ng mensahe sa pamamagitan ng email sa mismong opisina ng EDUCAUSE at hiningi ang kanilang pagsang-ayon na magamit ang kanilang binuong talatanungan upang gamitin sa sariling pag-aaral ng mananaliksik. Bukas ang EDUCAUSE sa paggamit ng kanilang material sapagkat isa sila sa mga institusyong pinapataas ang kalidad ng mga pag-aaral at pananaliksik sa larang ng impormasyon, komunikasyon, at teknolohiya.

Sa binuong talatungan na gagamitin ng mananaliksik sa pag-aaral na ito, hindi direktang ginamit at isinalin ang lunsarang talatanungang nabanggit sa taas. Ginamit lamang ito upang magsilbing gabay sa pagbuo ng pinal na talatanungan lalo na ang mga bahaging may kinalaman sa paggamit ng mga aplikasyong productivity software at direktang epekto nito sa akademikong kakanyahan ng isang mag-aaral.

Sa unang bahagi ng talatanungan makikita ang mga tanong hinggil sa katangiang mayroon sa isang mag-aaral ayon sa tatlong aspekto tulad ng sosyo-ekonomiko, akademiko, at kakayahang panteknolohiya.

Nahahati naman ang ikalawang bahagi sa dalawang uri. Una, bumuo ang mananaliksik ng isang pagsusulit upang mataya ang antas ng kasanayan batay sa kaalaman. Sa ikalawang bahagi masusumpungan ang antas ng kasanayan ng mga mag-aaral sa paggamit ng mga aplikasyong productivity software batay sa kakayahan at kaasalan.

Gumawa ng liham ng pagpapatibay ang mananaliksik upang pahintulutan ng tagapangasiwa at/o dekana ng ng isang pampublikong pamantasan ang mananaliksik na magsagawa ng isang pag-aaral sa nabanggit na Pamantasan.

Humingi ng pahintulot ang mananaliksik sa mga dekano ng Kolehiyo ng Edukasyon na magamit sa pag-aaral ang mga mag-aaral na nagpapakadalubhasa sa asignaturang Filipino mula ikalawang antas hanggang ikaapat na antas bilang respondyente ng pag-aaral. Bumuo ang mananaliksik ng talatanungan o survey questionnaire, ipinamahagi at kinolekta ito upang malaman ang katangian at kasanayan

ng mga mag-aaral sa paggamit ng mga aplikasyong productivity software. Ginamit dito ang Google Form bilang isinagawa ang pagkalap sa paraang online upang mas epektibo at episiyante ang pag-iisa ng mga datos.

Pagkatapos ng pagkolekta ng impormasyon, pag-aanalisa ng mga datos ang sumunod na hakbang. Sa hakbang na ito, mahalagang sinuri ang mga datos at bumuo ng mga kongklusyon na nakabatay sa mga datos na nakalap. Kaakibat din nito ang pagsasagawa ng isang test-retest upang matiyak na balido ang kalalabasan ng resulta. naisagawa ang nasabing test-retest sa pamamagitan ng random na pagpili sa sampung mag-aaral na dadaan ang preliminaryong pagsasarbey. Sa tulong ng estadistista, lumabas na balido ang talatanungan at walang anumang salik ang maaaring nakaaapekto sa magiging resulta ng aktuwal na pagsisiyasat sa mga kalahok.

Huling hakbang na ginawa ang pagbibigay ng konklusyon at rekomendasyon. Dito, ipapakita ang mga natukoy na kongklusyon at nagbigay ng rekomendasyon batay sa natukoy na impormasyon at mga resulta ng pananaliksik.

Mean. Gumamit ang pag-aaral na ito ng Weighted Mean upang maipakita ang katangian ng mga mag-aaral ayon sa aspektong sosyo-ekonomiko, akademiko, at kakayahang panteknolohiya. Gayundin, gagamitin ang estadistikang ito para suriin ang antas ng kasanayan ng mga mag-aaral sa paggamit ng mga aplikasyong productivity software batay sa kakayahan at kaasalan.

Pearson Correlation Coefficient (r). Panghuli namang ginamit ang Pearson (r) upang matukoy kung may makabuluhang kaugnayan ang katangian ng mga mag-aaral sa antas ng kakayahan sa paggamit ng mga aplikasyong productivity software.

Dalawang magkaibang iskala (scale) naman ang ginamit sa pag-aaral na ito. Una, ginamit ang iskala sa pagtukoy ng pagkamataas o pagkamababa ng pangkalahatang marka (general average) na natamo ng mag-aaral sa nakaraang semester. Batayan ito ng kaniyang akademikong aspekto.

Binigyang-tuon lamang ng pananaliksik na ito ang katangian at kasanayan ng mga mag-aaral sa paggamit ng aplikasyong productivity software. Saklaw lamang ng pag-aaral na ito ang mga mag-aaral na nagpapakadalubhasa sa asignaturang Filipino mula ikalawang taon hanggang ikaapat na taon sa kolehiyo sa isang pampublikong pamantasan. Bilang karagdagan, isinagawa ang pag-aaral na ito sa unang semester ng panuruang taon 2022-2023. Hindi dito isinali ang mga dati o kasalukuyang semester.

Ginamit ng mananaliksik ang buong enumerasyon ng mga mag-aaral bilang pangkalahatang populasyon ng pag-aaral. Sa pangkalahatan, sinaklaw ng pag-aaral ang kabuoang 212 na mag-aaral na nagpapakadalubhasa sa Filipino.

Naging lunsaran ng intrumentong ginamit sa pag-aaral na ito ang 2020 EDUCAUSE Student Technology Survey. Labas naman sa usapin ang pangkalahatang program outcomes ng BSED maging ang iba pang kadalubhasaan ayon sa memorandum na inilabas ng Komisyon sa Lalong Mataas na Edukasyon. Karagdagan dito, minabuti ng

mananaliksik na limitahan sa sampu ang tanong sa talatanungan hinggil sa pagsukat ng kaalaman ng mga mag-aaral. Sa kadahilanan ito ng maliit na saklaw ng tema at paksa na sentro ng tinatalakay ng pag-aaral.

Labas din sa pag-aaral na ito ang mga mag-aaral ng nasa unang taon ng mga nagpapakadalubhasa sa Filipino sapagkat manipis pa ang kanilang kamalayan sa paggamit ng mga aplikasyong productivity software sa pagtuturo. Pinagtibay din ito ng perspektibang hindi pa nila pinag-aaralan ang asignaturang Educational Technology 1 na itinuturo sa ikalawang semester ng unang taon ayon na rin sa balangkas ng mga asignatura sa pamantasan. Hindi saklaw ng pag-aaral na ito ang iba pang kampus ng naturang pamantasan. Nakasentro din lamang ang pag-aaral na ito sa mga mag-aaral ng Kolehiyo ng Edukasyon. Nangangahulugan itong labas ang ibang kurso sa populasyon ng pag-aaral na ito. Hindi rin kabilang dito ang ibang mag-aaral sa iba't ibang kadalubhasaan katulad ng Ingles, Matematika, Agham, at iba pa.

Espisipiko ring nilimitahan ang pag-aaral na ito sa kakayahan ng paggamit ng teknolohiya bilang paggamit ng ilang aplikasyon sa kompyuter katulad ng MS Teams at Google Suits particular sa word (docs), excel (spreadsheet), presentation (slides), at mga kaugnay na aplikasyon. Hindi rito kabilang ang pagsasaayos ng hardware o anumang manipulasyon ng pisikal na kompyuter.

Dapat ding mabatid na nakasentro ang pag-aaral na ito sa mga aplikasyong productivity software. Nangangahulugang tinatalakay rito ang mga ginagawa at ginagamit na aplikasyon na may kaugnayan sa nasabing aplikasyon. Malawak ang usapin ng paggamit ng teknolohiya kaya minabuti ng mananaliksik na mas maging maliit ang lawak nito sa ginagamit lamang na productivity software. Gayunpaman, walang isasagawang aktuwal na gawain sa pag-aaral na ito. Nakatuon lamang ang pag-aaral sa batayang kaalaman sa productivity software.

RESULTS

Talahanayan 1

Katangian ng mga Mag-aaral sa Aspektong Akademiko

Antas	Mean	Interpretasyon
BSED-2 Filipino	1.14	Mahusay
BSED-3 Filipino	1.86	Katamtaman
BSED-4 Filipino	2.00	Katamtaman

Iskala: 1.00-1.40 – Napakahusay, 1.41-1.80 – Mahusay, 1.81-2.20 – Katamtaman

2.21-2.60 – Mababa, 2.61-3.00 – Napakababa

Talahanayan 2

Katangian ng mga Mag-aaral sa Aspektong Nabigasyong Panteknolohiya

Salik	Mean	Interpretasyon
Pag-encode sa kompyuter	4.74	Napakahusay
Pagbukas at pagsara ng device	4.30	Napakahusay
Pagtukoy sa virus	4.32	Napakahusay
Pagkonek sa internet	4.74	Napakahusay
Pagkilala sa uri ng file	4.11	Mahusay
Pagsasaayos ng mga files	4.86	Napakahusay
Pagda-download ng files	4.34	Napakahusay
Paggamit sa control keys	4.13	Mahusay
Pagkonek sa sa isa pang device	3.64	Mahusay
Pagsasagawa ng split screen	2.97	Katamtaman

Iskala: 4.21-5.00 – Napakahusay, 3.41-4.20 – Mahusay, 2.60-3.40 – Katamtaman
1.81-2.60 – Mababa, 1.00-1.80 – Napakababa

Talahanayan 3

Katangian ng mga Mag-aaral sa Aspektong Akademiko at Nabigasyong Panteknolohiya

Salik	Mean	Interpretasyon
Akademiko	1.67	Napakahusay
Nabigasyong Panteknolohiya	4.22	Napakahusay

Akademiko: 1.00-1.40 – Napakahusay, 1.41-1.80 – Mahusay, 1.81-2.20 – Katamtaman
2.21-2.60 – Mababa, 2.61-3.00 – Napakababa
Nabigasyon: 4.21-5.00 – Napakahusay, 3.41-4.20 – Mahusay, 2.60-3.40 – Katamtaman
1.81-2.60 – Mababa, 1.00-1.80 – Napakababa

Talahanayan 4

Antas ng Kasanayan sa Paggamit ng mga Aplikasyong Productivity Software batay sa Kaalaman

Antas	Mean	Interpretasyon
BSED-2 Filipino	3.85	Mahusay
BSED-3 Filipino	3.26	Mahusay
BSED-4 Filipino	3.47	Mahusay

Iskala: 4.21-5.00 – Napakahusay, 3.41-4.20 – Mahusay, 2.60-3.40 – Katamtaman
1.81-2.60 – Mababa, 1.00-1.80 – Napakababa

Talahanayan 5

Antas ng Kasanayan sa Paggamit ng mga Aplikasyong Productivity Software batay sa Kakayahan

Salik	**Mean**	**Interpretasyon**
Pananaliksik sa internet	4.07	Mahusay
Pagmamanipula sa mga aplikasyon	4.09	Mahusay
Aplikasyong Microsoft Office		
Paggamit ng MS Word	4.74	Napakahusay
Paggamit ng MS Excel	4.49	Napakahusay
Paggamit ng MS Publisher	3.93	Mahusay
Paggamit ng MS Teams	2.64	Mababa
Paggamit ng MS Powerpoint	4.28	Napakahusay
Aplikasyong Google Suites		
Paggamit ng Google Docs	3.33	Katamtaman
Paggamit ng Google Sheets	3.09	Katamtaman
Paggamit ng Google Slides	3.78	Mahusay
Paggamit ng Google Mail	3.18	Katamtaman
Paggamit ng Google Meet	4.41	Napakahusay
Paggamit ng Google Classroom	4.38	Napakahusay
Paggamit ng Google Jamboard	2.22	Mababa
Paggamit ng Google Drive	2.72	Katamtaman
Paggamit ng Google Forms	2.98	Katamtaman
Paggamit ng Google Calendar	2.86	Katamtaman
Aplikasyon sa Pag-edit		
Paggamit ng Canva	3.72	Mahusay
Paggamit ng Photoshop	2.48	Mababa
Paggamit ng InDesign	2.13	Mababa
Paggamit sa mga Aplikasyon		
Pagkuha ng Larawan	3.82	Mahusay
Pagrekord ng Awdyo	3.73	Mahusay

Pagpapadala ng Mensahe	4.39	Napakahusay
Pagsasaayos ng Settings	3.00	Katamtaman
Pagmamanipula sa mga laro	3.51	Mahusay

Iskala: 4.21-5.00 – Napakahusay, 3.41-4.20 – Mahusay, 2.60-3.40 – Katamtaman
1.81-2.60 – Mababa, 1.00-1.80 – Napakababa

Talahanayan 6

Antas ng Kasanayan sa Paggamit ng mga Aplikasyong Productivity Software batay sa Kaasalan

Salik	Mean	Interpretasyon
Paglalagay ng Internet Content Filter	3.96	Mahusay
Pagsunod sa gabay sa paggamit	4.34	Napakahusay
Tinitiyak ang mga website	3.42	Mahusay
Inilalagay sa ligtas na lugar ang device	4.25	Napakahusay
Maayos ang pagkakaupo	3.38	Katamtaman
Ibinabahagi ang files sa pag-aaral	3.74	Mahusay
Pinipili ang mga taong maayos online	3.92	Mahusay
Isinasabuhay ang netiquette	3.34	Katamtaman
Hindi nagpapakalat ng fake news	3.52	Mahusay
Isinasaayos ang device matapos gamitin	4.44	Napakahusay

Iskala: 4.21-5.00 – Napakahusay, 3.41-4.20 – Mahusay, 2.60-3.40 – Katamtaman
1.81-2.60 – Mababa, 1.00-1.80 – Napakababa

Talahanayan 7

Antas ng Kasanayan sa Paggamit ng mga Aplikasyong Productivity Software

Kasanayan	Mean	Interpretasyon
Kaalaman	3.53	Mahusay
Kakayahan	3.85	Mahusay
Kaasalan	3.83	Mahusay

Pangkalahatan	3.73	Mahusay

Iskala: 4.21-5.00 – Napakahusay, 3.41-4.20 – Mahusay, 2.60-3.40 – Katamtaman
1.81-2.60 – Mababa, 1.00-1.80 – Napakababa

Talahanayan 8

Ugnayan ng Katangian ng mga Mag-aaral sa Kasanayan sa Paggamit ng mga Aplikasyong Productivity Software

Nakapag-iisang Baryabol	Di-nakapag-iisang Baryabol	r	Interpretasyon
Akademiko	Kaalaman	0.6552	May Makabuluhang Kaugnayan
	Kakayahan	0.8616	May Makabuluhang Kaugnayan
	Kaasalan	0.7621	May Makabuluhang Kaugnayan
Nabigasyong Panteknolohiya	Kaalaman	0.8605	May Makabuluhang Kaugnayan
	Kakayahan	0.5860	May Makabuluhang Kaugnayan
	Kaasalan	0.5028	May Makabuluhang Kaugnayan

DISCUSSION

Talahanayan 1

Ipinapakita ng resulta na marami-rami sa mga respondiyanteng sangkot sa pag-aaral ang nakakuha ng marking mas mataas sa average na 2.0. Indikasyon ito ng kakayahan at kaalaman nila sa mga asignaturang nauna nilang pinag-aralan.

Maaaring rason ditong madalas na nakakaharap ang mga mag-aaral sa ikalawang taon sa kolehiyo ng mga panimulang kurso na nagtatatag ng kaalaman sa pundasyon. Hindi gaanong mahirap ang mga kursong ito kompara sa dalubhasa at advanced na coursework na karaniwang ginagawa ng mga mag-aaral sa ikaapat na taon sa loob ng kanilang mga majors. Bukod pa rito, habang umuunlad ang mga mag-aaral sa kanilang mga undergraduate na taon, may posibilidad silang bumuo ng mas mahusay na mga

gawi sa pag-aaral at mga kasanayan sa pamamahala ng oras, na nag-aambag sa pinabuting pagganap sa akademiko.

Gayunpaman, maaaring humarap ang mga mag-aaral sa ikaapat na taon sa mas mahigpit na pamantayan sa pagmamarka, lalo na sa mga proyekto ng thesis o mga kurso sa capstone, na nangangailangan ng malawak na pananaliksik at pagsusuri. Higit pa rito, maaari ding makaapekto ang ideolohiya ng "senioritis" sa mga mag-aaral sa ikaapat na taon, na humahantong sa pagbaba ng motibasyon at tumuon sa coursework habang papalapit ang pagtatapos.

Dagdag pa, maaaring maimpluwensyahan ng pagkiling sa pagpili ang akademikong perspektiba, kung saan maaaring huminto o magpalit ang mga mag-aaral na nahihirapan sa akademya ng mga major bago maabot ang kanilang ikaapat na taon. Dahil dito, maaari itong humantong sa mas mataas na proporsyon ng mga mag-aaral na may mataas na tagumpay sa ikaapat na taon, na posibleng magpapataas ng pangkalahatang marka (general average) para sa mga mag-aaral sa ikalawang taon. Sa pangkalahatan, nagpapakita ang pagkakaiba sa mga average na marka sa pagitan ng mga mag-aaral sa ikalawang taon at ikaapat na taon ng kumbinasyon ng mga salik, kabilang ang likas na katangian ng coursework, pag-unlad ng akademiko, pamantayan sa pagmamarka, at mga indibidwal na motibasyon at priyoridad ng mag-aaral sa kabuoan ng kanilang karanasan sa kolehiyo.

Sa kalatas na ipinalabas ng Kagawaran ng Edukasyon noong 2021 partikular sa DepEd Memorandum Blg. 036, idinidiin na walang bagsak na marka ang ibibigay sa mga mag-aaral. Marahil isa ito sa isinaalang-alang kung bakit wala sa mga mag-aaral ang may bagsak na marka. Maaaring salik din dito na ang tiningnan lamang ng mananaliksik ang pangkalahatan o average na marka at hindi ang partikular na marka sa bawat asignatura.

Ang pangkalahatang marka (general average) mula sa nakaraang semester isang napakahalagang metriko na may malalim na implikasyon sa akademikong takbo ng isang mag-aaral sabi nga ni Harris at Hofer (2018). Ang aggregate na sukat na ito ng pagganap sa pag-aaral hindi lamang nagtatakda ng katayuan ng isang mag-aaral sa kanilang akademikong komunidad kundi nagmumula rin sa iba't ibang pagkakataon at pangarap sa hinaharap. Ang mataas na GWA kadalasang isinasalarawan bilang academic excellence, nagbubukas ng mga pintuan sa parangal, scholarship, at pakikilahok sa mga espesyalisadong programa.

Talahanayan 2

Maaaring nagmula ang pagkakaiba-iba sa mga kasanayan sa pag-navigate sa teknolohiya sa mga mag-aaral sa kolehiyo mula sa ikalawa hanggang ikaapat na taon sa ilang mga kadahilanan. Nagpapakita ang mga mag-aaral ng mas mataas na kasanayan dahil sa kanilang tumaas na pagkakalantad sa iba't ibang mga digital na tool at platform sa paglipas ng panahon. Habang sumusulong sila sa kanilang pag-aaral sa kolehiyo, mas nasanay sila sa paggamit ng teknolohiya para sa mga layuning pang-akademiko, tulad

ng pananaliksik, pakikipagtulungan sa online, at paglikha ng nilalaman. Bukod dito, maaaring sumailalim ang mga mag-aaral sa mga panimulang kurso o workshop na partikular na idinisenyo upang mapahusay ang kanilang mga kasanayan sa digital literacy, na nag-aambag sa kanilang kahusayan sa teknolohiya sa nabigasyon.

Ilang pagnanabigasyon, gaya ng paggamit ng mga control key, pagkonekta sa iba pang mga device, at paggamit ng split-screen na functionality, ang maaaring magpakita ng mas mababang antas ng kasanayan sa mga mag-aaral sa kolehiyo. Maiuugnay ang pagkakaibang ito sa kakulangan ng partikular na pagtuturo o pagsasanay sa mga partikular na kasanayang ito sa loob ng kurikulum ng kolehiyo. Bagama't maaaring bihasa ang mga mag-aaral sa mga pangunahing gawain tulad ng pagba-browse sa web at pagpoproseso ng dokumento, maaaring hindi sila nakatanggap ng partikular na pagtuturo sa mga mas gawing mas mataas ang antas.

Bukod pa rito, nangangailangan ang pagiging komplikado ng mga gawaing ito ng mas malalim na pag-unawa sa mga prinsipyo ng teknolohiya at mga gawain sa paghanap ng solusyon sa isang suliranin, na maaaring hindi makuha ng mga mag-aaral sa pamamagitan lamang ng kanilang kurikulum. Samakatuwid, sa kabila ng kanilang pangkalahatang pagkapamilyar sa teknolohiya, maaaring makaharap ang mga mag-aaral ng mga hamon sa pagsasaulo ng mga partikular na kasanayan sa pagnanabigasyon nang walang karagdagang gabay o mapagkukunan.

Talahanayan 3

Nagpapakita ng mahalagang ugnayan ang diretsahang proporsyon sa pagitan ng mataas na antas ng akademikong tagumpay at advanced na kasanayan sa nabigasyon sa teknolohiya sa pagitan ng dalawang larangan sa kasalukuyang edukasyon. Kadalasang nagpapakita ang mga mag-aaral na mahusay sa akademiko ng mataas na kakayahan sa paggamit ng teknolohiya nang epektibo upang suportahan ang kanilang mga pagsisikap sa pag-aaral. Madalas silang may kasanayang ginagamit sa kagamitang digital at plataporma para sa pananaliksik, pakikipagtulungan, at pag-organisa, at nagpapalalim ng kanilang pang-unawa sa mga paksa at nagpapabilis ng kanilang tagumpay sa akademiko.

Bukod dito, nagbibigay ang kasanayang sa pag-navigate sa teknolohiya sa mga mag-aaral ng mataas na antas ng tagumpay sa akademiko ng kakayahan na maakses ang iba't ibang pinagmulang impormasyon. Tinuturuan silang magpakalat ng mga ideya sa mabisang paraan sa pamamagitan ng digital na midya, at magpakita ng kakayahang makibagay at malutas ang mga suliraning teknikal na kanilang hinaharap sa mga komplikadong akademikong hamon.

Dagdag pa, mahusay rin ang mga indibidwal na may mataas na antas ng kasanayan sa nabigasyon na teknolohiya. Nakahanda sila sa paggamit sa mga digital na kapaligiran ng modernong edukasyon, na nagtutulak sa kanila sa mas malalim na pakikilahok sa akademikong nilalaman at mga gawain. Maayos silang kumalap ng

impormasyon, makipagtulungan sa kanilang mga kasamahan, at magpakita ng kanilang mga ideya gamit ang mga kagamitang digital na nagbubunga ng kanilang tagumpay sa akademikong aspekto. Nagpapakita ng ugnayang ito sa pagitan ng mataas na antas ng akademikong tagumpay at kasanayan sa nabigasyon ng teknolohiya ng kahalagahan ng integrasyon ng teknolohiya sa edukasyon upang magbunga ng mas mataas na antas ng mga resulta sa pag-aaral at maghanda sa mga mag-aaral para sa tagumpay sa isang lalong nagiging digital na mundo.

Kapag mataas ang marka ng isang mag-aaral sa aspektong pang-akademiko, nagpapahiwatig ito ng kanyang kahusayan, pag-unawa, at tagumpay sa kanyang mga akademikong gawain at pagsusulit. Sa konteksto ng paggamit ng teknolohiya, sinabi ni Garcia (2020) na maaaring magdulot ang mataas na marka ng maraming positibong implikasyon. Nagpapakita ang mataas na marka ng kahusayan sa paggamit ng teknolohiya para sa pag-aaral. Nagpapahiwatig ito na bihasa ang mag-aaral sa paggamit ng mga digital na kasangkapan tulad ng computer, internet, at iba pang mga teknolohiya upang mapabilis at mapadali ang kanyang pag-aaral.

Talahanayan 4

Nagpapahiwatig ang datos na ito ng iba't ibang antas ng kaalaman at kasanayan sa teknolohiya sa mga mag-aaral mula sa iba't ibang taon sa kolehiyo. Nangangahulugan ang mataas na average na marka ng mga mag-aaral sa ikalawang taon na sila ang may malakas na pang-unawa at kasanayan sa paggamit ng mga aplikasyon ng productivity software. Maaaring dulot ito ng kanilang kamakailang pagkakaroon ng kaugnay na kurso lalo na sa asignaturang Educational Technology 1 o ilang pagsasanay, pati na rin ang kanilang kaalaman sa modernong teknolohiya at digital na mga tool na ginagamit sa nasabing asignatura.

Ibig sabihin naman ng mga mas mababang average na marka ng mga mag-aaral sa ikatlong at ikaapat na taon ang posibleng mga butas o kakulangan sa kanilang kaalaman kaugnay ng mga aplikasyong productivity software. Maaaring maging kahulugan nito ng pangangailangan ng karagdagang pagsasanay, mga mapagkukunan, o suporta upang mapabuti ang kanilang kasanayan sa teknolohiya. Posible ring nakatuon na ang mga mag-aaral sa ikatlong at ikaapat na taon sa mas mataas at komplikadong mga kurso sa kanilang mga major na asignatura, na nagreresulta sa mas kaunting emphasis sa mga paksa kaugnay ng teknolohiya.

Ipinapakita ng datos ang kahalagahan ng patuloy na edukasyon at suporta sa pagpapabuti ng kasanayan sa teknolohiya ng mga mag-aaral, anuman ang kanilang taon sa pag-aaral. Ipinapakita rin nito ang potensiyal na mga benepisyo ng pagsasama ng mga pagkakataon para sa pag-aaral kaugnay ng teknolohiya sa buong kurikulum ng

kolehiyo upang matiyak na magkaroon ang mga mag-aaral ng mahahalagang kasanayan para sa tagumpay sa kasalukuyang digital na mundo.

Talahanayan 5

Ipinapakita nitong may mataas na antas ng kasanayan ang mga respondiyante sa iba't ibang aspekto ng paggamit ng teknolohiya. Nagpapakita ang kanilang mataas na antas sa kakayahang pananaliksik sa internet na mahusay sila sa paghahanap at pag-aaral ng impormasyong *online*. Pangalawa, nagpapakita ang mataas na antas sa manipulasyon ng mga aplikasyonat sa paggamit ng aplikasyong Microsoft Office na bihasa sila paggamit at pagpagpapasimple sa iba't ibang *software* at *tool* para sa kanilang mga akademikong gawain. Sa kabila nito, nangangahulugan ang katamtamang antas sa mga aplikasyong Google Suites ng mas mababang antas ng pagsasanay o exposure sa nasabing plataporma.

Sa kabilang banda, implikasyon ng mababang antas sa mga aplikasyong pang-*edit* ang potensyal na kakulangan sa kaalaman o kasanayan sa pag-edit ng mga larawan, bidyo, o iba pang mga nilalamang *multimedia*. Gayunpaman, ipinapakita ng pangkalahatang mataas na antas sa application usage skills na magaling ang mga mag-aaral sa pangkalahatang paggamit ng mga application, bagaman maaaring may mga espesipikong aspeto na maaaring kailangan pang pagtuunan ng pansin o pagpapalakas ng kasanayan. Sa kabuoan, ngabibigay-diin ang impormasyong ito sa malawak na kakayahan ng mga mag-aaral sa paggamit ng teknolohiya, kasama ang mga potensiyal na pamamaraan para sa pagpapabuti o pag-unlad.

Sa gayon, masasabing kinakailangan pang paunlarin ng mga mag-aaral ang kanilang kakayahan sa teknolohiya dahil mula rito mayroon pang maaaring maging bunga ang kaalaman sa teknolohiya ayon na rin mula sa pahayag ni Pasey (2019), na magagamit ang mga makabagong teknolohiya sa edukasyon sa Pilipinas at maaaring maging solusyon sa mga problemang kakulangan sa classrooms, guro at mga libro.

Talahanayan 6

Lakaging nakatuon ang modernong edukasyon sa paggamit ng teknolohiya bilang kasangkapan sa pag-aaral at pangangasiwa ng trabaho. Dahil dito, natutong magpahalaga ang mga mag-aaral at magkaroon ng positibong pananaw sa paggamit ng aplikasyong productivity software upang mapadali ang kanilang mga gawain sa paaralan at sa kanilang propesyonal na buhay. Karagdagan pa, nakakaalam na ang mga mag-aaral ng kolehiyo na may malaking ambag sa kanilang pagiging epektibo at organisado ang mga aplikasyong ito. Sa pamamagitan ng paggamit ng mga tool tulad ng spreadsheet, presentasyon, at word processing software, mas madali para sa kanila na magampanan ang kanilang mga gawain sa klase at maging mas produktibo sa kanilang mga pag-aaral. Magbubunsod ito ng positibong karanasan at kumpyansa sa kanilang

kakayahan na gamitin ang mga teknolohikal na kasangkapan sa kanilang pang-araw-araw na buhay.

Nagpapahiwatig ang mataas na antas ng pag-uugali ng mga mag-aaral sa kolehiyo sa paggamit ng aplikasyong productivity software ng kanilang pagiging handa at kakayahan na gamitin ang mga teknolohikal na kasangkapan upang mapadali ang kanilang mga gawain at mapalakas ang kanilang mga kakayahan sa edukasyon at propesyonal na larangan.

Idiniin ni Mortenson (2022) na ang kahalagahan ng mga halaga sa paggamit ng productivity software lumalampas sa simpleng kasanayan sa teknikal; ito kinabibilangan ng etikal na mga pag-aalala, responsibilidad, at integridad. Una, mahalaga ang mga halagang tulad ng katapatan at integridad upang tiyakin na ginagamit ng wasto at responsableng ang productivity software. Dapat maunawaan ng mga mag-aaral ang kahalagahan ng paggalang sa karapatan sa ari-arian ng isipan at hindi pagsasangkot sa plagiarism o hindi awtorisadong paggamit ng software. Ang pagpapanatili sa mga halagang ito nagpapalaganap ng kultura ng tiwala at katarungan sa akademikong at propesyonal na mga setting, na nagdaragdag sa positibong kapaligiran sa pag-aaral at pagtatrabaho.

Talahanayan 7

Mapapatunayan ng mga lumabas na datos mula dito na ang isang taong salat sa paggamit ng teknolohiya hindi gaanoong nakakaalam sa mga iba’t ibang gamit ng teknolohiya. Ang kahirapan o kasaganaan ng isang tao nakakaapekto upang magkaroon ang isang indibidwal ng kaalaman sa teknolohiya. Kaya naman mainam na nagkaroon sa kasalukuyan ng mga online courses na magagamit ng mga mag-aaral kahit mayroon lamang isang uri ng gadget.

Habang umuunlad ang mga mag-aaral sa kanilang akademikong paglalakbay, madalas silang nakakaharap ng mga kursong mas dalubhasa at nakatuon sa teknolohiya, na nag-aambag sa mas malalim na pag-unawa sa mga teknolohikal na konsepto at aplikasyon. Samakatuwid, malaking salik ang guro sa pagkatuto ng mga mag-aaral pagdating sa teknolohiya. Kaya naman kinakailangang makaisip ang guro ng mga pamamaaraan kung paano niya mapadanas sa kanyang mga mag-aaral ang pagtuturo ng mga teknik sa paggamit ng teknolohiya.

Iminumungkahi ni Smith (2019) na ang mga mag-aaral sa mas matataas na mga semestre ng kaalaman maaaring makilala sa isang mas mataas at masinsinang teknolohiyang kurikulum, na posibleng mapahusay ang kanilang teknolohikal na literasi.

Mula rin sa pagpapatunay ng pag-aaral na isinagawa nina Cabral, Y., Li, H., & Kapuno, C. (2017) na pinagtibay nina Lee, H., & Lim, Y. (2020), binanggit na kailangang pagtuunan ng pansin ang teknik sa pagtuturo na dapat sinasanay at pinong-pinong inilalahad ng gurong gumagamit nito upang ang pamamaraan mas maging epektibo kapag ginagamit ang tiyak na kagamitang pampagtuturo. Sa gayon, kailangan na ang

susunod na magiging guro bihasa rin sa paggamit ng teknolohiya upang mas maiparating sa mga mag-aaral ang kawilihan sa pagkatuto.

Sa perpektiba ng integrasyong kurikular, minumungkahi ng pananaliksik ni Zheng, Luo, at Fel (2020) na kapag ang teknolohiya epektibong isinama sa kurikulum, ang mga mag-aaral may posibilidad na mas mahusay na gumanap sa akademiko habang sila nagkakaroon ng mga praktikal na kasanayan kasama ng teoretikal na kaalaman.

Talahanayan 8

Ipinapakitang may makabuluhang kaugnayan ang akademikong aspekto at antas ng kaalaman sa paggamit ng aplikasyong productivity software. Patunay rito na ang mataas na marka ng mag-aaral ang patunay na nauunawaan niya ang paggamit sa bawat bahagi ng naturang aplikasyon sa likod ng komplikado nitong pamamaraan. Kaugnay nito, lumalabas din ang makabuluhang kaugnayan sa pagitan ng akademikong aspekto at antas ng kasanayan batay sa kakayahan.

Maraming salik na isinasaalang-alang ang kakayahan sa mga nasabing aplikasyon. Kung lumalabas sa pag-aaral na kaugnay ang mataas na marka sa kung paano ginagamit ang ilang mga salik, pinatotohanan nitong nangangailangan ng mataas na antas ng kaalaman sa paggamit ng mga aplikasyon. Marahil dahilan ditong ang mga malaki ang epekto sa bawat isa ng mga aplikasyon at salik na isinaalang-alang sa pag-aaral. Sa usaping kaasalan naman, lumalabas na may kakayahang magkaroon ng positibo at maayos na gawi ang mga mag-aaral na may mataas pa ring antas ng kamalayan sa apektong akademiko. Ibig sabihin, lumalabas na nauunawaan nila ang ilang gawaing makapagpapaaigting ng maayos na asal sa paggamit ng mga aplikasyong productivity software.

Mahusay na maipapamalas naman ng isang mag-aaral ang kaniyang nabigasyong panteknolohiya kung may mahusay rin siyang nabigasyong panteknolohiya. Nangangahulugan itong nakakaapekto sa paggamit ng teknolohiya ang dati nang alam ng isang mag-aaral tungo sa kasalukuyang kakayahang ipinamamalas niya. Dahil dito, mas napapataas ang antas sa kung ano na ang kinasanayang sistema ng paggamit.

Conclusions

1. Nabuksan ang pananaw ng mananaliksik na ang tatlong aspekto na sinuri mainam na gamitin upang makita ang katangian ng isang estudyante tungkol sa aspektong teknikal. Natuklasan ng mananaliksik na hindi lamang kailangang pokus sa iisang aspekto ang pananaw ng katangian. Natuklasan mula rito na nangangailangan ng marami pang estratehiya ang mga guro na nagtuturo sa mga magiging guro sa Filipino upang mas lalo pang maging malawak ang kaalaman ng mga mag-aaral

sa mga educational technology materials na kinakailangan sa pagtuturo sa kasalukuyang panahon.

2. Natuklasan ng pag-aaral na ito ang katotohanan na upang maging mas dalubhasa ang mga estudyante kailangan ng sanayin sa real world experiences o sa mga totoong karanasan sa klasrum. Isa sa mga nakuhang kaisipan sa pag-aaral ng mananaliksik na ang kaalaman ng isang mag-aaral sa teknolohiiya at kasanayan maaari pang mapaunlad. Pabagu-bago ang takbo ng edukasyon sa kahingiian nito upang maging dalubhasa ang isang guro. Kailangan na pataasin ang lebel ng kaalaman at kasanayan sa teknolohiya, upang lalong maging produktibo ang mga mag-aaral. Ang bawat taomng pampaaralan taon ng pagsasanay para sa totoong karanasan sa klasrum ng mga susunod na guro.
3. Pinaiigting sa paglabas sa pag-aaral na ito na kailangang mapataas pa ang antas ng kasanayan ng mga mag-aaral dahil nakaugnay ito sa katangian ng mga mag-aaral sa paggamit ng teknolohiya. Labis na napatunayan ng mananaliksik na ang pananaw ng mag-aaral sa paggamit ng teknolohiya kailangang bukas ang kanyang kaisipan sa pagbabago. Sa gayon, napatutunayan lalo ang pag-aaral na ang pinakamahalagang proseso ng pagtuturo at pag-aaral ng mga mag-aaral nakasalalay sa mabuting paraan ng pagtuturo ng isang guro. Ang guro ang nagpaplano at nagdedesiyon sa pamaraang gagamitin na angkop sa bunga ng pagkatuto na nais makamtan ng mga mag-aaral, angkop sa sitwasyon, angkop sa kakayahan ng mga mag-aaral at gayundin sa uri ng paksang-aralin at kursong kanyang ituturo.

4. Natuklasan ng mananaliksik panukalang itong inaasahang makapagbibigay ng angkop na solusyon sa pagpapataas ng antas ng kaalaman at kasanayan sa teknolohiya ng mga mag-aaral na nagpapakadalubhasa sa Filipino. Napatunayang mas mapapaunlad ang kaalaman at kasanayan ng mag-aaral kung magkakaroon ng bagong estratehiya sa pagtuturo sa mga estudyante na mayroong pagtataya sa totoong karanasan pagdating sa aspekto ng teknolohiya.

Recommendations

1. Magkaroon ng aktibong pagsasanay ang mga mag-aaral sa kanilang mga asignatura na may kinalaman sa teknolohiya.
2. Tulungan ang mga mag-aaral na maabot ang mas malalim na pang-unawa pagdating sa teknolohiya at kasanayang kinakailangan ukol dito.
3. Mainam na tulungan ang mga mag-aaral na lalo pang mapaunlad ang kanilang mga kakayahan sa paggamit ng teknolohiya.
4. Maglaan ng panahon ang mga guro upang turuan ang mga mag-aaral sa aspektong teknikal at kung paano mas mapapadali ang pagbuo ng estratehiya at pagtataya sa klasrum bilang guro.
5. Magprodyus pa ng maraming materyales na makatutulong upang mahasa ang mga mag-aaral sa kanilang mga kasanayan sa aspektong teknikal at

mga pamamaraan kung paano mas mapaunlad ang kakayahan ng mga mag-aaral sa paggamit ng iba't ibang gadgets at educational applications na kailangang gamitin sa loob ng klasrum upang mahasa ang mga mag-aaral.
6. Magkaroon ng awtput ang mga mag-aaral sa pamamagitan ng mga computer applications upang lalong mahasa ang kasanayan sa teknolohiya.
7. Mainam na magbigay din ng mga pagsasanay sa loob ng klasrum at makikita ang mga mag-aaral sa kanilang pagsasanay.
8. Magkaroon pa ng mga gabay sa pagtuturo sa aspekto ng teknolohiya maliban pa sa mga aklat at modyul na inililimbag na sumusukat sa pamantayan ng mga mag-aaral sa kanilang kasanayan.
9. Maglaan ng panahon upang mapag-aralan ang mga kurikulum ng mga mag-aaral na nagpapakadalubhasa sa Filipino.
10. Masegurong ang kaisahan ng mga target pampagkatuto at nilalaman ng mga aralin maayos ang patutunguhan upang marating ang layunin.
11. Magkaroon ng ebalwasyon sa mga panukalang proyekto na isinasagawa upang makapagbigay ng suwestiyon ang iba pang mga dalubhasa sa nararapat na paggamit ng teknolohiya.
12. Maglaan ng mga seminar at peer teaching sa mga mga mag-aaral na nagpapakadalubhasa sa Filipino upang mas lalong masanay sa aspektong teknikal ang mga mag-aaral.
13. Makapagsanay ang mga mag-aaral bilang bahagi ng kanilang kurikulum sa kanilang klase ang mga gawaing panteknolohiya.
14. Maglaan ng panahon upang pag-aralan ang mga iba't ibang educational applications na magagamit sa hinaharap na pagtuturo.

Compliance with Ethical Standards

Mandato ng isang pananaliksik na pangalagaan ang integridad at kapakanan ng bawat kalahok upang higit na maging makabuluhan at magkaroon ng kalidad ang pag-aaral. Ito ang magbibigay ng proteksyon sa mga taong sangkot sa pananaliksik at magtitiyak na hindi sila magdudulot ng pinsala o kapahamakan sa kanila.

Sa pananaliksik na binuo, isinaalang-alang ang ikabubuti ng bawat kalahok. Malinaw na ipapaliwanag ang layunin at adhikain nito. Hindi sapilitan ang pagpapasuri at pagpapasagot ng talatanungan na makikitaan ng personal na datos ng kalahok at opinyon hinggil sa antas ng katanggapan sa paglahok sa pag-aaral. Iginalang ng mananaliksik ang anumang maging desisyon ng mga kalahok para sa paglikom ng mga datos na kinakailngan sa pagtugon sa mga suliranin ng pag-aaral. May itinalagang numero sa bawat kalahok upang maitago ang kanilang pagkakakilanlan.

Sa katunayan, nagkaroon ng informed consent ang mga respondiyante. Sa pagkakaroon ng nito, naipaalam sa mga respondent ang layunin ng pananaliksik, kung paano ito gagawin, at kung ano ang posibleng epekto nito sa kanila. Sa pamamagitan

nito, masisiguro na alam ng mga respondiyante ang kanilang mga karapatan at hindi sila mapapasama sa anumang uri ng pananaliksik na hindi nila nais na sumali.

Tiyak sa pag-aaral na ito na anumang antas ng confidentiality ang nalinaw at naipaliwanag sa mga mag-aaral na kalahok sa pananaliksik na ito.

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KUWENTO NG PAGTATAPA: PAGBUO AT PAGLALARAWAN SA PAGKAKAKILANLAN NG MERCEDES

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ABSTRAK

Nakatuon ang pag-aaral na ito sa paglalarawan at pagsasalaysay ng kulturang taglay ng isang komunidad na magkaroon ng panibagong mga dalumat upang higit na magkaroon ng pag-unawa at pagkakakilanlan sa usaping etnograpiko at pang-okupasyong varayti ng wika partikular ang munisipalidad ng Mercedes, Camarines Norte sa mga gawaing pagtatapa. Isa ang pagtatapa sa mga gawaing pantahanan at pangkabuhayan ng mga barangay na malapit sa mga *pandawan* katulad ng Barangay I, III, IV, at San Roque. Sumailalim ang pag-aaral na ito gamit ang *fieldwork* at pagmamapa sa tulong din ng pagsusulong sa maka-Filipinong pamamaraan ng pananaliksik tulad ng pakapa-kapa, patanong-tanong, pakikipagkuwentuhan, ginabayang talakayan, at nakikiugaling pagmamasid bilang mga tiyak at espesipikong pamamaraan sa pagkalap ng mga datos. Kinapalooban ito ng siyam na *respondent* na nasa 20 taon at mahigit pa sa karanasan sa pagtatapa ang sumailalim sa serye ng pakikipanayam at *focused group discussion (FGD*). Natuklasan sa pag-aaral ang iba't ibang kuwento ng pagtatapa tulad ng mga natatanging karanasan at ang pagtatapa bilang pinagsasaluhang kultura ng apat na piling barangay. Nakakuha at nakapagtala rin ng mga tema at dalumat tungkol sa pagkakakilanlan sa Mercedes sa tulong ng mga kuwento, salaysayin, at ng kanilang kultura. Naipakita ring may malaking ambag sa kultura ng Mercedes ang mga paratapa lalo't higit walang gaanong identidad sa akademikong pasulat na larang ang mga paratapa sa nasabing munisipalidad. Ipinakita na kakaiba at natatangi ang pagtatapa sa ibang okupasyon sa pamamagitan ng pagpapakilala ng buhay, pinagmamalaking produkto, pagmamahal sa paggawa, at mga totoong kuwento ng paghahanapbuhay tungo sa pagkakakilanlan ng kanilang bayan.

Keywords: *varayti ng wika*, *Mercedes, fieldwork, pagmamapa, focused group discussion*

INTRODUKSIYON

Ang paglinang at pag-unlad ng isang kultura ay isang makapangyarihang daluyan ng paghahanap ng pagkakakilanlan ng tao o grupo sa kaniyang sariling lugar o bayan. Isang paraan para makilala at maramdaman ng kaniyang lipunan kung sagana at makulay ang kultural na aspekto ng kaniyang lugar partikular nang sarili niyang bayan. Sinabi nga nina Amtalao at Demeterio III (2019), mapanghamong gawain ang pagtalakay sa iba-ibang aspekto ng isang kultural na pangkat. Maingat, pinagtatahi-tahi, at komprehensibong sinuri ang mga talang kasaysaysan galing sa kapana-panaligang batayan, at pakikipanayam sa karanasan ng grupo na bahagi ng isang pangkat. Sinusugan ito ng pagbuo ng isang komisyon na ang pangunahing layunin ay pagpapalakas at pagpapaunlad ng sining at kultura ng bansa batay sa *Batas Republika 7356* (1992) o mas kilala ngayong *National Commission for Culture and the Arts (NCCA).*

Batay sa adhikaing gawain sa 2013-2016 ng *NCCA* o Pambansang Komisyon sa Kultura at mga Sining *Program Thrusts: Culture and Arts 2013 to 2016 "Culture and Arts as a Pillar of Development"* na naglalayong ipakilala ng mahusay ang pagiging matatag na bansa sa pamamagitan ng pagtatampok ng kultura at sining ng iba't ibang lugar sa bansa. Ang nasabing hangarin ng Komisyon ang isa sa pundasyon ng pagpapalakas ng edukasyon lalo na sa pag-alam, pagsulyap sa kasaysayan at pinagmulan, at paggamit sa pagkatuto. Tunay na pinalalakas ang wika at kultura bilang makapangyarihang lunduan ng karunungan para maipagmalaki pa nang husto ang sariling bayan.

Isinaad sa *Batas Republika Blg. 10533, 2013* ng K to 12 na Kurikulum, layunin ng asignaturang Filipino na binubuo ng pagtuturo ng wika at panitikan na bigyang-pansin ang kakayahang komunikatibo, replektibo, mapanuring pag-iisip, at pahalagahan ang panitikan ng mga mag-aaral gamit ang mga kagamitang pagtuturo may kinalaman sa pagbasa at paggamit ng teknolohiya para sa pagkakaroon ng pambansang identidad. Sinusugan ito ng adhikain ng Kagawaran ng Edukasyon sa pagbigay at paglatag ng *learning competency* sa *K to12 Araling Panlipunan Gabay Pangkurikulum* (2016) tungkol sa mga paksang pag-aaral ng pagkakilanlang kultural ng kinabibilangang rehiyon na "naihahambing ang pagkakatulad at pagkakaiba ng mga kaugalian, paniniwala, at tradisyon sa sariling lalawigan sa kinabibilangang rehiyon at sa ibang lalawigan at rehiyon." Nilalayon din nitong palakasin ang kaalaman o literasi sa kalinangang kultura, at bukas sa alinmang pagbabagong makakasabay sa nangyayari sa mundo.

Ang Mercedes bilang pangunahing paksa o lugar ng pag-aaral ay pinili sa 12 munisipalidad sa Camarines Norte dahil sa taglay nitong pagkakilanlan sa mga produktong dagat na pangunahing gamit sa pagtatapa, at sa pinapakilalang kultura

ng nasabing bayan. Bagaman wala o kulang pa sa mga pag-aaral ang bayan ng Mercedes, may sarili naman itong imahen o pagkakilanlan dahil na rin sa mga produktong ipinagmamalaki ng lugar partikular na ang tapa o tinapa, at pagtatapa bilang pangunahing kabuhayan ng mga mamamayan sa bayan na nasasakupan *(lgumercedes.com).* Ang kakulangan sa pag-aaral tungkol sa tapa o pagtatapa, at mismong pag-aaral sa Mercedes na may mayamang kultura ang sisipatin, sisilipin, at ipapakilala sa kabuoan ng pag-aaral. Ang pananaliksik ang nagbigay ng ibang anggulo at mukha sa pamumuhay, kabuhayan, at mismong kulturang mayroon ang isang lugar. Nagawa rin ng pag-aaral na na ipakilala ang iba-ibang baryasong pangwika at sistema ng pagsasagawa ng isang okupasyon o kabuhayan ng isang lugar.

Kitang-kita rin ang pagsasama ng iba't ibang aspekto na may kaugnayan sa kalinangang kultural. Sa ibinigay na idea ni Peralta (2015) tungkol sa pagpapaunlad ng kultura na pundasyon ng lipunan gamit ang pinagbukalan o pinagmulan at mga nakuhang kasaysayan ay magiging parte ng isang kaugalian, binigyang-pansin nito ang nilalaman ng mga pag-aaral nina Villan (2023), Albis (2021), Jamora (2021), Nuncio et al. (2020), Amtalao at Demeterio III (2019), Pontemayor (2019), at Cabeca (2018) tungkol sa pagkilala, paghahanap, at pagtuklas ng kultural na yaman na makapangyarihang instrumento ng komunidad. Idagdag pa ang mga pag-aaral nina Del Monte (2022), Hije (2022), Aler (2020), Augusto (2018), at Nieto at Magno-Orejana (1986) na ang disenyo at pagkain ay representasyon ng kultural at sosyal na aspekto, palatandaan ito na may natatangi at buhay ang yaman ng kultura sa isang lugar. Ang pagtukoy naman sa mga salik na nakakaapekto sa pagtuklas ng natatanging kultura ay mauunawaan gamit ang pamamapa ng isang komunidad. Ayon kay Flores (2020), ang pagmamapa ay sumasalikop hindi sa pag-alam ng lokasyon, lunan o paligid, kundi, pagtukoy sa mga tala na may kaugnayan sa lugar at kulturang mayroon ito.

Sa paggamit naman ng varayti at baryasyon ng wika, makikita ito sa mga pag-aaral nina Lamadrid (2021), Francisco (2020), Aler (2020), Ilagan (2020), at Mindalano (2018) na may kinalaman ang dibersidad ng wika sa aktuwal na pakikipamuhay. Ang wika at kultura ay may mahigpit na ugnayan at buhay na patunay sa pag-unawa sa baryasyon ng wika sa bansa. Sa madaling salita, nagagamit rin ang baryasyong pangwika sa pagpapakilala o pagkakakilanlan ng isang komunidad.

Ang pagkilala naman sa wika at kulturang Bikol ay malaking ambag sa pagkakalantad at pagkakaroon ng malalim na pagtingin sa kulturang mayroon ang rehiyon. Ang mga artikulo nina, Owen (1998), Mallari (1999), Mintz (2004), Nasayao (2010), Adiova (2014), Conde (2018), Llana (2021) at pag-aaral nina Tria (2001), Lynch (2004), Sahagun (2022), at Nidea (2023) ay mga patunay na may natatanging kulturang taglay ang Bikol. Bilang pagpapahalaga naman sa pagkakaisa at pagkakapantay-pantay ng kulturang Bikol, binigyang-kahulugan naman ang kultura nina Hall (1959) at De leon (2014) at sinuportahan ng aklat at artikulo nina O'Brien (1966), Albis (2016), Victoria (2024) at Cordero (2024) ang mga nasabing katangian

nito.

Ang paglalarawan at pagsasalaysay ng mga baryasyong pangwika ng pagtatapa sa Mercedes ang magpapakita ng varayti ng wika ng propesyon at/o kabuhayan. Bukod sa iilan pa lamang ang nagsasagawa ng pag-aaral tungkol sa tapa o pagtatapa, madalas na proseso lamang ng pagsasagawa nakasentro ang pag-aaral. Dahil dito, ang Mercedes bilang pangunahing lunan o lugar na gagawing pag-aaral ang sentro ng gagawing pagmamapa sa pagpapakilala ng pagtatapa at baryasyong pangwikang mabubuo rito.

Mga Suliranin ng Pag-aaral

Nilayong sagutin ng pag-aaral ang sumusunod na tanong.

1. Ano ang mga kuwento kaugnay sa pagtatapa ng mga taga-Mercedes?

2. Anong baryasyon ng wika ang mabubuo sa pagtatapa bilang pang-okupasyong varayti ng mga paratapa sa Mercedes?

3. Ano ang pagkakakilanlan ng mga paratapa sa apat na piling barangay ng munisipalidad ng Mercedes?

4. Ano ang kultural na identidad ang mabubuo gamit ang kuwento ng pagtatapa sa Mercedes, Camarines Norte?

METODOLOHIYA

Ang pangunahing metodolohiyang ginamit sa pag-aaral ay kalitatibo (qualitative) at ang paraang pagmamapa. Kalitatibo ang pamamaraan dahil nakabatay ang pokus ng pag-aaral sa pagkalap ng impormasyon sa heograpikong may kinalaman sa kasaysayan, wika, kultura, at pagkakilanlan ng isang lugar o komunidad. Ang pag-iisa-isa ng mga detalye ng pag-aaral ng isang okupasyon, pamumuhay, at pagpapalitaw ng isang pagkakakilanlan ay kinakailangan upang matiyak ang mga hakbang sa mainam na pananaliksik (Ichiano, 2020). Gamit ang masusing obserbasyon, binalangkas na pakikipanayam, at pagmamapa, mabubuo at magkakaroon ng pagkakilanlan ang Mercedes. Ayon kay Flores (2020), ang pagmamapa ay sumasalikop hindi sa pag-alam ng lokasyon, lunan o paligid, kundi, pagtukoy sa mga tala na may kinalaman sa lugar at kulturang mayroon ito. Dagdag pa, nakasaad ditong ang pag-aaral ay hindi nangangailangan ng mahigpit na pamantayan ng estadistika at kwantipikasyon ng mga datos ang siyang bumubuo ng pagkakakilanlan ng komunidad. Pinakaangkop ito sa mga pag-aaral ng kultura na nakatuon *“impact of human culture, both material and non-material, upon the natural environment and the human organization of space.”* Binigyang-diin nito ang pag-aaral tungkol sa kahalagahan ng pagtalakay sa pananatili ng wika, relihiyon, ekonomiya,

gobyerno, at iba pang penomenong kultural mula sa isang lugar at sa iba pa, at inilalarawan din ang kilos-galaw ng tao sa lugar o lunan na kaniyang kinalalagyan. Kapaki-pakinabang ang pagmamapa sa pagpapakita ng pagbabago ng paligid ayon sa galaw ng kalikasan na siyang nagtatakda ng pagbabago din sa galaw ng tao.

Ang *purposive sampling method* ang ginamit na paraan ng mananaliksik sa pag-aaral dahil lapat ito sa maka-Filipinong paraan ng pananaliksik na pinakagamitin upang matukoy nang mahusay ang mga *respondent* ng pag-aaral. Ang *purposive sampling method* din ay akmang-akmang gamiting paraan sa pananaliksik na nagpapalitaw sa wika at kultura ng isang komunidad o bayan. Karagdagan, gamit ang *purposive sampling method* mairerepresenta ng mga *respondent* na mapipili ang kaalaman sa suliranin ng pananaliksik, interes at kakayahan sa pagtugon ng mga tanong na ibibigay, at ang karanasan sa partikular na disiplinang kasinakasangkutan (Ichiano, 2020). Sa tulong ng *purposive sampling technique*, napili ang tiyak na mga paratapa o *respondent* sa pananaliksik na may 20 taon o mahigit na siyang paratapa at natiyak na sila talaga ay may malawak, marami nang karanasan, at matagal nang gawi at kilos na gamit sa pakikipamuhay ang pagtatapa. Ang binalangkas na pakikipanayam na dumaan sa mabusising balidasyon ng mga eksperto ang ginamit na mga tanong sa isinagawang *FGD* sa siyam na target na kalahok ng pananaliksik.

Ang pakikisalamuha o *fieldwork* ang pangunahing paraan sa pagmamapa na ginawa sa pag-aaral. Ang pagmamapa ay sumalikop hindi sa pag-alam ng lokasyon, lunan o paligid, kundi, pagtukoy sa mga tala na may kinalaman sa lugar at kulturang mayroon ito (Flores, 2020). Ang pananaliksik ay may tatlong hakbang sa pagmamapa na ginawa sa proseso ng pangangalap ng mga impormasyong ginamit upang mabuo ang pananaliksik na ito.

Upang matugunan ang unang suliranin, ginamit ng mananaliksik ang binalangkas na pakikipanayam o interbyu para sa pagkuha ng impormasyon mula sa mga kuwento ng mga paratapa sa Mercedes. Mula rito sinimulan ang pagmamapa sa pagkalap ng datos gamit ang aktuwal na obserbasyon at partisipasyon sa lugar na pinag-aaralan. Ang pakikipanayam ang pangunahing instrumento sa pagkuha ng datos ay hinati sa dalawang bahagi: (1) ang mga tanong na ginamit sa pakikipanayam ay dumaan sa kamay at mata ng mapagkakatiwalaang eksperto na kilala sa disiplina at (2) pagkatapos ng balidasyon ng tanong, saka lamang ginamit ng mananaliksik bilang instrumento ng ginawang pag-aaral.

Sa pangalawang suliranin, pakikipanayam o interbyu pa rin ang pangunahing instrumento sa pagkuha ng impormasyon. Para mailuwal ang baryasyong pangwika ng pagtatapa, kinailangang malay o may alam ang mananaliksik sa disiplina kaya naman ang *fieldwork* o aktuwal na obserbasyon muna ang ginawa bago bumuo ng talatanungang may kaugnayan sa pagtatapa. Mula sa obserbasyong ginawa ng mananaliksik sa lunan o lugar na pinag-aaralan ibinatay ang mga tanong na ginamit. Ang mga tanong ay idinaan muna ng mananaliksik sa mga eksperto sa disiplina upang matiyak na tama ang mga tanong na ibinigay sa mga *respondent*. Ang pangunahing laman ng mga tanong ay wikang ginagamit ng mga paratapa para

ilabas o ipakilala ang varayti ng wika para sa okupasyonal na larang. Pagkatapos ng balidasyon, saka lamang ito ibinigay ang tanong sa mga *respondent* ng pag-aaral. Hiwalay ang ginawang interbyu sa tigdalawang kalahok sa apat na napiling barangay at isang paratapa na gumagamit ng bagong kagamitan sa pagtatapa. Ang analisis na diskurso naman ang ginamit sa pakikipanayam o interbyu, at mga ibinigay na sagot sa talatanungan ay sinuri nang mahusay upang mabuo ang varayti ng wika ng mga paratapa sa Mercedes.

Sa pangatlo at pang-apat naman na suliranin, ginamit ang *focused group discussion* para mailuwal ang pagkakilanlan ng apat na piling barangay sa Mercedes at kultural na identidad ng mga paratapa sa nasabing lugar. Sa isinagawang *FGD*, bumuo muli ng mga tanong na ibinigay sa siyam na *respondent* mula sa piling barangay ng Mercedes na pangunahing bahagi ng pag-aaral. Ang mga tanong ay muling dumaan sa balidasyon bago ibigay sa mga kalahok o *respondent* para matiyak ang kaangkupan at kaakmaan ng gagawing *FGD* sa piling paratapa sa barangay I, III, VI, at San Roque (Pugad Lawin). Ang mga nabuong tanong sa balidasyon sa tulong ng mapagkakatiwalaang eksperto sa nasabing larang ang nagsilbing instrumento upang mabuo at mailarawan ang identidad ng mga paratapa sa apat na piling barangay at pagkakakilanlan ng Mercedes sa kabuoan ng pag-aaral. Ginawang matibay na dokumentasyon ang mga nairekord na pakikipanayam sa mga paratapa sa mga napiling barangay. Tanaw-dinig o *audio-visual* ang nangyayaring pakikipanayam. Dumaan din muna sa paghingi ng pahintulot ang mananaliksik upang bukal at may kalayaan ang mga kalahok o *respondent* kung kailangan ihinto o ipagpatuloy ang pagrerekord ng mga usapan. Binigyang din ng mananaliksik ng kaniya-kaniyang kopya ng mga tanong ang mga kalahok para maging malinaw at patas ang kabuoan ng pakikipanayam. Sa pagtukoy sa pagkakakilanlan ng mga paratapa sa munisipalidad ng Mercedes, inalam ang mga datos gamit ang *thematic data analysi*s upang makuha ang pangunahing tema ayon sa resulta ng ginawang *focused group discussion*. Ayon kina Braun at Clarke (2012) ito ang masistemang pagtukoy, pag-oorganisa, at pagbibigay ng mga patern sa pagpapakahulugan ng mga tema sa mga set ng datos. Ang resulta naman ng ginawang *focused group discussion* ang ginamit na rebyu ng dokumentasyon na pagsusuri gamit ang *thematic data analysis* sa pagbuo sa pagkakilalanlan ng Mercedes.

RESULTA

Talahanayan 1. Demograpikong Propayl ng mga Respondent

Kalahok/ *Respondent*	**Edad**	**Kasarian**	**Barangay**	**Taon ng Pagtatapa**

R-1	54	Lalaki	San Roque	25
R-2	69	Lalaki	San Roque	29
R-3	55	Babae	I	24
R-4	53	Lalaki	I	39
R-5	57	Lalaki	III	30
R-6	65	Lalaki	III	21
R-7	62	Lalaki	III	35
R-8	59	Babae	IV	25
R-9	37	Lalaki	IV	23

Talahanayan 2. Nabuong Tema para sa Suliranin 1.

Suliranin	Nabuong Tema	Tugon ng mga Respondent
1. Ano ang mga kuwento kaugnay sa pagtatapa ng mga taga-Mercedes?	**A. Mga Kuwento Tungkol sa Pagtatapa** **A.1. Ang Pagtatapa Bilang Pamanang Kultural**	*"Ang pagtatapa po kasi ang pangunahin at karamihan ng hanapbuhay dito. Yung mga anak na noon ay nakapag-aral, magkakaibang trabaho. Pero yung medyo tamad sa pag-aaral diyan na lang yan, kasi mahirap ang buhay. Yung mga tamad naman na anak na mag-aral diyan na lang maoobligang magtapa."* (R1, Lalaki, 54, Barangay San Roque) *"Yun po talaga ay kultura na. Kasi noon pang panahon hanggang sa*

		kasalukuyan ganun pa rin po ang hanapbuhay. Nung namatay ang mga ninuno namin, ang sumunod na ngayon ay iyon pa rin po ang hanapbuhay." (R5, Lalaki, 57, Barangay III) *"Siyempre, babalik at babalik ka pa rin sa trabahong ito. Kasi kapag wala ka ng ibang hanapbuhay, dito ka pa rin babagsak sa tapahan. Hindi tulad ng ibang trabaho, pag nag-retired ka na, wala na. Hindi tulad dito sa tapahan kahit matanda ka na, basta kaya mo pang gumalaw, pwede ka pa rito."* (R9, Lalaki, 37, Barangay IV) *"Sa magulang din po, namana rin po namin ang pagtatapa."* (R7, Lalaki, 62, Barangay III) "*Hiling lang po. Mayo man pag-eskuwela sa pagtatapa. Pigtandaan mi lang, pinagsadiri mi na."* (R3, Babae, 55, Barangay I) ("Tingin lang po. Wala man pag-eskuwela sa pagtatapa. Tinandaan lang naming, sinarili na namin.")
	A.2. **Ang Kuwento sa Likod ng Pagtatapa Bilang De-kalidad na Produkto**	*"Sa akin ay wala akong panahon na inaayawan. Kapag masama lang ang panahon. Kailangan kasi, nakagisnan na ng mga tao ang produktong tinapa.*

		Kailangan pa rin magtapa kahit wala na masyadong nahuhuling isda. Kapag meron lang isda, sige lang. Yung ang pangunahing kailangan ng mga tao baga. Wala naman akong ginagawa, pagtatapa lang talaga. Siyempre nagkakaedad na rin tayo." (R2, Lalaki, 69, Barangay San Roque) *"Hindi. Ako lang, kasi ako ang padre de familia sa amin. May hanapbuhay naman silang iba. Ang pagtatapa, hilig 'yan. Kumbaga, willing kang yun ang business mo, yun talaga ang ibibusiness mo. Yung ibang kapamilya ko naman, may mga trabaho naman sila kaya hindi sila willing na magtapa."* (R1, Lalaki, 54, Barangay San Roque) *"Maray man talaga ang karanasang hali sa magurang, nakatuto kaming magtapa. Kung bako sa magurang dae man kami makakanood diyan. Ta iba man, kaniya-kaniyang man baga sindang luto. Samuya sa experience lang talaga sa magurang kaya diyan kaming nakanood."* (R7, Lalaki, 59, Barangay III) ("Maayos talaga ang karanasang galing sa magulang, nakatuto kaming magtapa. Kung hindi dahil sa magulang

		hindi kami matuto diyan. Ang iba naman, kaniya-kaniya silang luto. Sa amin karanasan lang talaga sa magulang kaya diyan kami natuto.")
	A. 3. Ang Bunga ng Gawaing Pagtatapa	*"Yung pagtatapa ay hanapbuhay naming yun. Doon kami kumukuha ng pagkain araw-araw. Kahit malugi o may tubo, doon lang. Sa amin, ikinabubuhay namin at sa pag-aaral ng anak."* (R4, Lalaki, 53, Barangay I) *"Ang pagtatapa para sa akin, yung aming ikinabubuhay. Yun ang aming hanapbuhay na galing sa pagtatapa. Relax kasi ang pagtatapa. Ang pagtatapa ang pinagkukunan nang pagkabuhay. Diyan ako nagpatapos ng pag-aaral ng mga bata. Mayroon na akong anak na nasa barko. May anak na akong graduate ng criminology. Yung bunso ko ay kasalukuyang third year college."* (R1, Lalaki, 54, Barangay San Roque) "*Ngayon po anak ko na ang nagtatapa. Nag-aalaga naman po ako ng baboy. Pero natulong pa rin po ako para mabilisan magluto at magtapa. Dahil ang anak ko po ay magtatapa po talaga. Kaya natinda sila sa Labo, Sipocot. Iyan po talaga*

		ang puntahan. Linggo, Huwebes, Biyernes sa Libmanan. Kapag kakaunti ang paninda dito na lang sa Labo, Linggo." (R7, Lalaki, 62, Barangay III) *"Pangkabuhayan ng pamilya. Pambuhay baga sa pamilya, konsumo. Yung gastusin, yung kita, panggastos sa bahay. Parang pagkakalakal ng pagtatapa, idedeliver sa kung saan mabenta para pagbalik may pera na. Yung ganyan sa tindahan, idi-deal mo sa palengke para maibenta at pag-uwi may pera na. Sa palengke kami. Hindi ko dinanas paglako. Mapagod, lakad. Rekta ako sa palengke. Halimbawa, sa palengke, araw ng tianggean. Halimbawa Linggo, o kaya dito Martes may tiangge. Nakaupo ka lang, nadaan ang mamimili. Hindi ka maglalakad, mapagod, dala mo yung 50 kilos. Nandun ka lang sa tabi ng kalsada. Dadaan yung nangangailangan ng tapa, mamimili, yung mga pang-ulam nila."* (R6, Lalaki,65, Barangay III)
	A. 4. Ang Mukha ng Pagtatapa sa Apat na Napiling Barangay sa Mercedes	*"Dito po talaga ang pagtatapa. 'Pag sa Bagasbas naman po, pagsira naman po diyan. Pagtinda ning sira. Eyu po ta iyo man po ang hanapbuhay talaga digdi. Pagtatapa po saka*

		pagtuyo. Pero po talaga digding taga-Mercedes, pagtapa po talaga." (R7, Lalaki, 62, Barangay III) ("Dito po talaga ang pagtatapa. 'Pag sa Bagasbas naman po, pag-isda naman po diyan. Pagtinda ng isda. Ito po talaga ang hanapbuhay rito. Pagtatapa po at pagtuyo. Pero po talaga ditong taga-Mercedes, pagtapa po talaga.") *"Nakikilaog lang dati sa kamalig. Nung matuto akong magluto, sinadiri ko na ta sayang ang kita. Hanggang sa alas-kuwatro ning maagahon nasiring na ako sa Pandawan, nahiling na ako ning sira. Kami na ang naluto. Madali man makanood 'pag nasa puso mo ang trabaho. Mayo man sakuyang nagtukdo."* (R3, Babae, 55, Barangay I) ("Nakikipasok kami dati sa tapahan. Nang matuto akong magluto, sinarili ko na kasi sayang ang kita. Hanggang sa alas-kuwastro ng umaaga pumupunta na ako sa Pandawan, tumitingin na ako ng isda. Kami na ang naluto. Madali man makanood 'pag nasa puso mo ang trabaho. Wala man sa akin nagturo.") *"Pinag-adalan talaga. Si primero, obserbasyon*

		muna. Ngunian, gawa na, aktuwal na, ako na mismo ang naggagawa. Ang mga process." (R5, Lalaki, 57, Barangay III) ("Pinag-aralan talaga. Nung una, obserbasyon muna. Ngayon, gawa na, aktuwal na, ako na mismo ang gumagawa. Ang mga proseso.") *"Nung naglipat kami dito, walang trabahong maayos. Yung diyan sa tapahan, nagtingin-tingin. Sabi sa akin, baka aniya gusto mong magtiritinda para magkaroon ng income. Sabi ko, sige kung papayagan ninyo."* (R2, Lalaki, 69, Barangay San Roque) *"Simula sa magulang namin. Sa magulang namin kami nagmana. Sariling namin ang tapahan. Yung nawala ang magulang namin, kami na ang nagpatuloy. Kasi hindi kaya ako nag-eskuwela ng college kaya negosyo na lang."* (R4, Lalaki, 53, Barangay I)

Baryasyon ng Wika sa Pagtatapa

Sa bahaging ito ay inilahad ang naging resulta ng isinagawang *focused group discussion*. Napakinggan, nakuha, at nabuo ang mga pang-okupasyong varayti ng wika sa pagtatapa.

Talahanayan 3. Varayti ng Wika ng Pagtatapa

Salita sa Pagtatapa	Kahulugan	Sipi	Larawan
Banyera	Ang tawag sa lalagyan ng bultuhan o maramihang isda na binibili at ginagamit ng mga paratapa sa gawaing pagtatapa. Ayon din sa *Bikol Dictionary*, ito ay malaking metal na palanggana na lalagyan ng isda na may yelo (Mintz, 2004).	*"Lalagyan po iyan Sir ng mga isda. Nakalagay po ang mga isda na tatapahin." (R-1, Lalaki, 54, San Roque)*	
Birot	Ang tawag sa lalagyan kung saan ibabad ang isda. Ito ay may asin na tinunaw kung saan ibabad ang isda na gagawing tinapa. Istakan ng isda.	*"Pagkatapos pong malinisan, ilalagay na po Sir sa birot. Aasinan na ang isda o papaalitan na. Nilalagay po sa birot para ibabad ang isda. Ang nakalagay po si birot ay tinunaw o tunaw na asin para umalat ang isda na ibabad." (R5, Lalaki, 57, Barangay III)*	

Broker	Ang tawag sa may-ari ng banye-banyerang isda sa Pandawan.	*“Para po makabili ng isda, kailangan pong makabulong sa broker. Binubulong po sa broker ang ang presyo nang mahina.” (R3, Babae, 55, Barangay I)*	
Bubulungan o Pagbulong	Ang tawag sa gawain ng pagbili ng maramihang isda sa Pandawan. Ginagawa ang pagbulong sa tinatawag na *broker* o may-ari ng banye-banyera isda sa Pandawan. Sinasabi nang mahina sa *broker* (ang presyo sa isda na bibilhin) nang sa gayon hindi malaman ng iba pang bibili ng banyerang isda ang presyo na ibinigay. Pataasan ng presyo o pagbulong para makuha ang banyerang isda.	*“Ang bulong po sinasabi sa broker para bigyan ng presyo ang banyerang gustong bilhin ng paratapa.” (R8, Babae, 59, Barangay IV)*	

Bulong	Ang presyo o tawad na ibinigay sa *broker* para sa bibilhing isda. Ito ang pagbabatayan ng *broker* kung kanino niya ibibigay ang banyerang isda na ibinebenta. Ayon naman sa *Bikol Dictionary,* ito ay pagpasa o paghatid ng mensahe (Mintz, 2004).	*"Mahina lang po Sir ang bulong para hindi marinig ng mga gusto pang bumili ng isda. Para po sa'yo agad ibigay ang isda niya." (R1, Lalaki, 54, Barangay San Roque)*	
Buyungaw o Bangaw	Ang tawag sa malaking langaw na dumadapo sa tinapa. Palatandaan na sira na ang tapa o ang isda.	*"Kapag ang tinapa ay nagtubig at nabasa na, madaling kapitan ng uod. Dadapuan ng langaw na malaki, yung Buyungaw. Kapag dinapuan siya, iiwanan na siya ng uod." (R5, Lalaki, 57, Barangay III)*	

Dadangdangon	Paraan ng pag-iinit ng isda. Kadalasan ginagawa ang pagdangdang ang dating lutong tapa iinitin para maging mukhang *fresh* ang tapa o tinapa na ibebenta.	*"Ang dadangdangon po pag-iinit ng isda po yan. Para po fresh ang isda at hindi madaling masira ang tapa o isda." (R5, Lalaki, 57, Barangay III)*	
Diyaryo	Ang lalagyan kung saan ibinabalot ang nabili ng tapa o tinapa. Naniniwala ang mga paratapa na mas matagal ang buhay kung sa papel nakalagay ang tapa at hindi madaling masira. Madali kasing amagin ang tinapa kapag sa plastik ito nakalagay.	*"Ibabalot na Sir sa diyaryo para po hindi madaling masira yung isda." (R4, Lalaki, 53, Barangay I)*	
Galunggong o GG	Ang mas kilalang isdang pangunahing gamit sa pagtatapa. Mas matigas ang laman at magandang tapahin. Mas gustong tapahin ng mga paratapa.	*"Galunggong po Sir, mas buo po ang laman kapag natapa na. Masarap din po." (R4, Lalaki, 53, Barangay I)*	

Gatong	Ang tawag sa kahoy na ginagamit sa paglalaga.	*"Ang gatong naman po ay gamit sa paglalaga o pagpapakulo. Kahoy po ang ginagatong sa paglalaga. Yung pong kahoy sa ginabang bahay o kahit po mga kahoy-kahoy sa likod bahay. Minsan Sir, bumibili kami." (R7, Lalaki, 62, Barangay III)*	
Kaing	*Ang basket* na pinaglagaan na isda. Ayon naman sa *Bikol Dictionary,* basket ito na gawa mula sa hinabing kawayan (Mintz, 2004).	*"Pagkatapos ng pagkababad sa birot ng mga isda, kakaingin na po. Ang pagkakaing o pag-aayos sa salangan o kaing yung parang pong bilog na bilao, ang sunod na proseso." R7, Lalaki, 62, Barangay III)*	
Kusot	Ito ay maliliit na hibla ng kahoy. Ito ang gamit sa pagluluto o pagpapausok ng isdang gagawing tapa. Ayon naman sa *Bikol Dictionary,* sawdust sa Ingles, o maliit na hibla ng kahoy (Mintz, 2004).	*"Ang kusot Sir ay maliliit na hibla ng kahoy. Sa pagpapausok na po yun ginagamit." (R1, Lalaki, 54, Barangay San Roque)*	

Pagba o Papa na	Ang tawag sa gatong o kusot na wala ng sindi. Wala ng kusot na nagpapausok. Ibig sabihin kailangang pang dagdagan ng gatong o kusot sa pagluluto o pagpapausok.	*"Papa na po Sir, wala ng ningas ang apoy." (R1, Lalaki, 54, Barangay San Roque)*	
Pagkakaing	Isa sa mga proseso sa paggawa ng tapa o tinapa. Paglalagay o paghahanay ng mga isdang lalagain.	*"Ilalagay na po sa kaing. Ihahanda na sa paggaga. Dapat ayos po ang pakalagay sa kaing para ayos din po ang pakaluto." (R1, Lalaki, 54, Barangay San Roque)*	

Paglalako o Pagbebenta	Ang paraan para mabili o mabenta ang tapa ay may iba-ibang paraan. Kung may puwesto sa palengke, ilalagay mo lang ito sa unahan na madaling makita ng mamimili at kusa na itong makikita at bibilhin o mabibili. Kung may malaki ka naman na umbuyan o tapahan, ang pagdedeliver sa mga karatig bayan ang paraan para maubos ang produktong tapa. Ang pinakataguring paglalako ay ang paglalakad-lakad nang may pagsigaw sa mga bara-barangay ng mga paratapa. Dito ang mga paratapa ang maghahanap o magbebenta nang gustong bumili ng tapa.	*"Minsan Sir, si paratapa ang nabenta. Naglalakad po sa mga bara-barangay. Ibabalot na Sir sa diyaryo para po hindi madaling masira yung isda." (R4, Lalaki, 53, Barangay I)*	 
Pahigang Pagtatapa	Ang tawag sa mga gawang tapa na karaniwang tumatagal ang buhay o hindi madaling masirang tapa. Ito ay maaaring 2-4 na araw.	*"Kung pahiyaga Sir, dapat matuyo yung isda kasi pangmalayuan at ibababiyahe. Yung patayo naman Sir, dito lang*	

		pangmalapitan lang yun. Pang-ulam lang po yun." (R1, Lalaki, 54, Barangay San Roque)	
Palang o Pagpalang	Ang tawag sa paghahati ng mga malalaking isda para gawing tapa. Kadalasang Tulingan ang mga pinapalang o pinuputol o binibiyak kung malaki ang isdang gagawing tinapa.	*"Pagpalang po. Hahatiin po yung malaking isda para tapahin. Mas maayos po kung hahatiin ang malaking isda para mas manuot po yung usok at flavor sa buong laman ng isda na tatapahin." (R5, Lalaki, 57, Barangay III)*	
Pandawan	Tinatawag na *fishport* sa Ingles. Bagsakan ng mga sariwang isda. Pinagkukuhaan ng mga isdang gagamitin sa pagtatapa.	*"Dinadala po rito ang maraming isda. Kumbaga po, bagsakan ng mga isdang nahuli." (R-5, Lalaki, 57, Barangay III)*	

Paratapa	Ang tawag sa nagluluto at nagtitinda ng produktong tapa. Ito rin ang pangunahing kabuhayan sa bayan ng Mercedes sa Camarines Norte.	*"Nakikilaog lang dati sa kamalig. Nung matuto akong magluto, sinadiri ko na ta sayang ang kita. Hanggang sa alas-kuwarto ning maagahon nasiring na ako sa Pandawan, nahiling na ako ning sira. Kami na ang naluto. Madali man makanood pag nasa puso mo ang trabaho. Mayo man sakuyang nagtukdo." (R3, Babae, 55, Barangay I)*	 
Partida	Tawag sa malaking tawad na presyo ng isda sa nangungumisyong mangingisda. Ayon naman sa *Bikol Dictionary*, ito ay pagbahagi o paghati-hati (Mintz, 2004).	*"Presyo mo Sir, tawad baga po. Kapag nakuntento po ang broker, bigay na po sayo agad ang isda." (R1, Lalaki, 54, Barangay San Roque)*	

Patayong Pagtatapa	Tawag naman ito sa mga gawang tapang pambenta na pang-isang araw lamang. Mabilis lamang ang buhay ng tapa na tumatagal lamang ng isang araw.	*"Sa San Roque sa Pugad Lawin yung patayo, pang-isang araw lang po. Kapag nailuto kailangan na agad maibenta o mailako. Sa amin po kasi sa Barangay I, pahiga kasi pambiyahe po yun, pangmatagalan." (R4, Lalaki, 53, Barangay I)*	
Sumpit o pansumpit	Paraan ng pag-spray na *food color* sa mga isdang pinausukan. Gamit para sa magandang presentasyon ng produktong tapa o tinapa. Ayon naman sa *Bikol Dictionary,* ito ay ang mag-*spray* (Mintz, 2004).	*"Kapag malamig na po, isprayan na po ng food color para mamula-mula ang kulay ng balat ng isda." (R3, Babae, 55, Barangay I)*	
Tapa o tinapa	Ang produktong kilalang-kilala sa bayan ng Mercedes, Camarines Norte. Ito ay isdang pinausukan o *smoke fish* sa Ingles. Kadalasan, Bangus, Galunggong, Tambansya, at Turay ang	*"Iyan kasi ang nakagisnan Sir ng Mercedes eh. Mula noon hanggang ngayon, ang pagtatapa andito na yan. Mercedes yun, walang iba." (R8, Babae, 59, Barangay IV)*	

	pinakagamiting isda sa paggawa. Binebenta sa pamamagitan ng paglalako, bultuhan, o kaya naman dinadala sa malalaking *mall* sa ibang bayan. Ayon naman sa *Bikol Dictionary, smoke fish* sa Ingles (Mintz, 2004).		
Tapahan	Tinatawag ding bahay-pausukan. Dito nagaganap ang proseso ng paglilinis, paglalaga, paghahanay, at pagpapausok ng isdang tatapahan. Ayon naman sa *Bikol Dictionary,* ito ay *smoke house* sa Ingles (Mintz, 2004).	*"Tapahan po Sir ay maliit lang, kung minsan po nasa bahay lang. Tulad po sa amin." (R3, Babae, 55, Barangay I)*	
Taytayan	Lalagyan nang nalaga o nilagang isda. Nilalagay ang mga napakuluang isda sa taytayan para ihanda sa pagpapausok. Ayon naman sa *Bikol Dictionary,* ihanay o ilinya nang maayos (Mintz, 2004).	*"Taytayan po yung tawag doon sa parang bilog na bilao na paglalagyan ng pauusukang isda." (R3, Babae, 55, Barangay I)*	

Tiklis	Lalagyan ng lutong isda o *finished product* na tinapa.	*"Ilalagay na po sa tiklis. Finished product na po ito. Bebenta po sa tao. Tapa na." (R1, Lalaki, 54, Barangay San Roque)*	
Tikapo	Nagmamadaling mga paratapa dahil hindi maabot ang *deadline* ang pangbentang mga produkto o ang tinapa. Minsan, panahon na para ibenta ang produkto dahil sa naghihintay na mamimili ngunit hindi pa tapos ang gawaing pagtatapa. Ayon naman sa *Bikol Dictionary,* ito ay kulang o may kulang (Mintz, 2004).	*"Natulong din kami kapag tikapo pagtinda para makahabol." (R7, Lalaki, 62, Barangay III)*	
Umbuyan	Tawag sa malaking tapahan; bumibili ng bultuhan o maraming banyera ng isda.	*"Sa umbuyan lang yun Sir. Malaki kasing tapahan ang umbuyan kaya dapat malaki ang lulutuan ng isda." (R6, Lalaki, 65, Barangay III)*	

Talahanayan 4. Nabuong mga Tema para sa Suliranin 3 at 4

Suliranin	Nabuong Tema	Tugon ng mga Respondent
3. Ano ang pagkakakilanlan ng mga paratapa sa apat na piling barangay ng munisipalidad ng Mercedes?	**C. Ang Kultura ng Paratapa sa Apat na Piling Barangay ng Munisipalidad ng Mercedes** **C. 1. Ang Kuwento ng mga Paratapa sa Pandawan ng Mercedes**	*"Nandito po kasi ang fishport na karamihan na nandito ang isda lalong higit yan na ginagamit sa pagtatapa. Kaya kapag Mercedes, mangingisda, tuyo, at pagtatapa."* (R2, Lalaki, 69, Barangay San Roque) *"Nagkokontruksyon. Halimbawa wala pong isdang dumating o mahal ang isda, konstruksyon kami magtatrabaho. Kapag malaki ang angkat, hindi kami makakabili ng isda."* (R9, Lalaki, 37, Barangay IV) *"Ang mag-isda. Mag-isda, ang isda kasi mabilis ang kuwarta. May puhunan ka lang ng 2 libo, pagkatapos maglako-lako ka lang diyan, ayos na. Maghapon tapos ka na. Parehas naman ng kita. Kapag nakabili ka ng isda na mura, pag-asa na. Pero kapag hindi ka nakabili ng isda na mura, wala, talo ka."* (R8, Babae, 59, Barangay IV) ("Ang mag-isda. Mag-isda, ang isda kasi mabilis ang pera. May puhunan ka

		lang ng 2 libo, pagkatapos maglako-lako ka lang diyan, ayos na. Maghapon tapos ka na. Parehas naman ng kita. Kapag nakabili ka ng isda na mura, pag-asa na. Pero kapag hindi ka nakabili ng isda na mura, wala, talo ka.") *"Natuto ako doon sa mga bago naming amo. Tuturuan ka nun kung ano ang gagawin, kung paano gumawa. Maganda naman. Wala kang tambay, kikita ka lagi para sa pamilya. Kapag nagtigil ka sa pagtatapa, paano ka na? Wala ka na. Paano mo mabubuhay yung apat [anak]? Paano mo mabubuhay yun? Bentahe lagi yung mayroon laging tapahin. Ganitong buwang [Oktubre] mahirap. Wala kang makukuhang GG, yung Galunggong kung tawagin. Yun ang tinatapa. Pana-panahon kasi ang mga dinadalang isda sa pagtatapa. Yung matigil na ako [magtapa], nagdagat na ako. Para mabuhay ang pamilya. Nanalangin din kami na sana hindi bumagsak yung pagtatapa naming. Siyempre nagpapasalamat ka. Sa simbahan. Katoliko naman ako."* (R6, Lalaki, 65, Barangay III) *"Una po Sir, kapag nagbili*

		ka ng isda, estimatin mo na dun sa bibilhin mong isda, tutubo ka kapag nagbulong ka." (R2, Lalaki, 69, Barangay San Roque) *"Sa aro-aldaw na income. Kapag nakakua man akong sira itong sigurado kang kikita. Kapag binenta ko, makakakuha man ng pansuporta sa pamilya."* (R5, Lalaki, 57, Barangay III) ("Sa araw-araw na kita. Kapag nakakuha man ako ng isda itong segurado kang kikita. Kapag binenta ko, makakakuha man ng pansuporta sa pamilya.")
	C. 2. Ang Kuwento at Kuwenta nang Pahiga at Patayong Pagtatapa	*"Sa San Roque sa Pugad Lawin yung patayo, pang-isang araw lang po. Kapag nailuto kailangan na agad maibenta o mailako. Sa amin po kasi sa Barangay I, pahiga kasi pambiyahe po yun, pangmatagalan."* (R4, Lalaki, 53, Barangay I) *"Kung pahiga po Sir, dapat matuyo yung isda kasi pangmalayuan at ibababiyahe. Yung patayo naman Sir, dito lang pangmalapitan lang yun. Pang-ulam lang po iyon."* (R1, Lalaki, 54, Barangay San Roque) *"Kapag pahigang tinapa, pangmatagalan po. Pandayo yun. 'Pag*

		nakatayo, pangmadalian lang. Isang araw lang." (R8, Babae, 59, Barangay IV) *"Sa amin din, maliit lang naman. Pansarili lang."* (R-2, Lalaki, 69, Barangay San Roque) *"Noong panahon, labas ang isda rito sa bayan ng Mercedes. Halos sumosobra ang ginagawang tinapa. Sa ngayong panahon, kumukulang ang supply sa gawaing tinapa dahil kung minsan galing na ng ibang bansa yung tatapahan. Di gaya noong dati masagana pa. Kailangan kasi nakagisnan na ng mga tao ang produktong tinapa. Kailangan pa rin kahit wala na masyadong nahuhuling isda rito. Hindi lang Camarines Norte, kung minsan nakakaabot pa ng Maynila sa mga Mall na galing dito sa bayan ng Mercedes. Mayroon ditong malaking tapahan ang ginagawa nila, dinedeliver sa mga Mall."* (R1, Lalaki, 54, Barangay San Roque)
	C. 3. Ang Kultura at Pamanang Kuwento ng mga Paratapa sa Mercedes	*"Noong panahon, labas ang isda rito sa bayan. Halos sumosobra ang ginagawang tinapa. Sa ngayong panahon, kumukulang na ang supply sa gawaing tapa dahil*

		kung minsan galing na ng ibang bansa yung tatapahin. Di gaya noong dati masagana pa. Kailangan kasi nakagisnan na ng mga tao ang produktong tinapa. Kailangan pa rin kahit wala na masyadong nahuhuling isda rito. Hindi lang Camarines Norte, kung minsan nakakaabot pa ng Maynila sa mga mall na galing dito sa bayan ng Mercedes. Mayroon ditong malaking tapahan ang ginagawa nila, dinedeliver sa mga mall." (R1, Lalaki, 54, Barangay San Roque) *"Malaki. Siyempre malaki at ano yun, yan talaga ang hanapbuhay naming mula't mula. Nakapagpaaral ang magulang naming. Pinaaral kaming lahat na mga anak ng nanay namit gamit ang pagtitinda at paglalako. Noong mga panahon nung 1980's, maganda yung hanapbuhay naming kasi mura ang isda. Ngayon wala na, tama lang sa pagkain."* (R4, Lalaki, 53, Barangay I) *"Matagal na. Halos 25 years na. Grade 4 pa lang ako, nagtatapa na ako."* (R8, Babae, 59, Barangay IV) *"Obserbasyon lang talaga. Kasi ang pagtatapa hindi*

		naman halos pinag-aaralan yan eh. Talagang 'pag may tapahan, makikita mo kung anong ginagawa nila, kung anong mga proseso. So gagayahin mo na lang talaga. Wala naming kasing pag-aaral sa pagtatapa. Mula nang magsimula ako diyan, wala naman pag-aaral sa pagtatapa. Hindi pinag-aralan o nagpasok ka sa school. Totally experience." (R1, Lalaki, 54, Barangay San Roque) *"Sa akin ay wala akong panahon na inaayawan, kapag masama lang ang panahon. Kapag meron lang isda, sige lang. Yung ang pangunahing kailangan ng mga tao baga. Wala naman akong ginagawa, pagtatapa lang talaga. Siyempre nagkakaedad na rin tayo."* (R2, Lalaki, 69, Barangay San Roque)
	C. 4. Ang Pagtatapa Bilang Pagbabayanihan	*"Labor lang po kami, yung labor lang din po na may malaking tapahan ang nagturo sa amin. Tinukdo na maray na magtapa at maglaga digdi sa tapahan. Yung may-ari po ang nagpapasok ng isda, siya ang kumukuha ng isda sa pandawan o kaya sa mga big buyer."* (R9, Lalaki, 37, Barangay IV) ("Labor lang po kami, yung

		mga labor lang din po na may malaking tapahan ang nagturo sa amin. Tinuro na maayos ang magtapa at maglaga dito sa tapahan. Yung may-ari po ang nagpapasok ng isda, siya ang kumukuha ng isda sa pandawan o kaya sa mga big buyer.") *"Hindi po, ako lang po. Tapos yung pong mga kasama kong nagtatapa. Pero labor lang po sila. Bali apat pong mimyembro ang gagawa niyan. May nagtataytay, may nagkakaing po. Iba-iba naman po ang trabaho dito. May labor po na mismong nasa tapahan."* (R9, Lalaki, 37, Barangay IV) *"Lahat kaming magkakapatid ito ang negosyo namin. Lahat, pero ngayon ako na lang ngayon ang nagtatapa. Yung kapatid ko, nagtindahan na lang. Yung nag-lockdown, magkakasama kaming nagtitinda sa Libmanan at Sipocot, hindi na siya nagtinda. Kasi parang naghina na yung birilihan."* (R4, Lalaki, 53, Barangay I)
	C. 5. Ang Karanasan ng mga Paratapa sa Apat na Napiling Barangay	*"Nung bagyong Rosing, marami ang nabulok na isda gawa ng inabot ng tubig. Daming nasayang*

		noon, halos lahat-lahat ng tapahan dito talaga. Kasi yung isda, nalaga na, nung dumating ang bagyong Rosing, tapos nabasa. Pwede pa naman sana kung may tuyong gamit tulad ng kusot, kaso wala naman, at lahat nabasa. Ang mga tapahan nagiba. Pero kapag walang bagyo, ayos lang." (R2, Lalaki, 69, Barangay San Roque) *"Paglaga at pagtapa. Kasi kapag lumaki ang apoy, tatakbo ka, masusunog ang isda mo. Babantayan mo kasi. Kasi kapag lumaki ang apoy, puwedeng makasunog ka o puwedeng mawalan ka ng isda, wala ka ng pantinda. Maluluto man, pero sobrang luto na."* (R9, Lalaki, 37, Barangay IV) *"Kapag walang tapahin, walang kita. Hindi man masyadong malaki ang tapahan naming. Yung tama lang. Halimbawa limang banyera o sampung banyera."* (R4, Lalaki, 53, Barangay I) *"Yung mga nagpatapos ako ng anak sa pagtatapa. Ang pagpapalaki ng mga bata diyan ko rin kinuha."* (R1, Lalaki, 54, Barangay San Roque) *"Kapag nagtitinda kami sa Daet, sa palengke ng Daet, sa Centro. Kapag*

		may pulis, naalis, naghaharabulan yan. Yung nahuli ako. Nahuli talaga ako ng pulis, kinulong kami. Kinulong kami niyan, marami kaming nakulong." (R8, Babae, 59, Barangay IV) *"Siguro yung nakakua ako ng isdang na yung frozen na naka-box. Pagdating ng oras na niluto ko na, ayun pala medyo hilaw ang pagkaluto. Pag-abot ng tatlong araw, inuhod yung tinapa. Nalugi ako doon. Kasi siya, maski luto na siya [tapa], kapag inagahan siya nagtutubig, kasi frozen. Hindi naluluto yung ilalim ng isda. Lalo kung dadaanin mo sa madalian. Kaso gusto mong ibenta na pagkamaga. Kapag malamig na siya, nagtutubig siya. Kapag ang tinapa ay nagtubig at nabasa na, madaling Kapitan ng uod. Dadapuan ng langaw na malaki, yung Buyungaw. Kapag dinapuan siya, iiwanan na siya ng uod."* (R5, Lalaki, 57, Barangay III)
4. Ano ang kultural na identidad ang mabubuo gamit ang kuwento ng pagtatapa sa Mercedes, Camarines Norte?	**D. Kultural na Pagkakilanlan ng Mercedes sa Tulong ng mga Kuwentong Nabuo sa Pagtatapa** **D. 1. Ang Maipagmamalaking**	*"Natuto ako doon sa mga bago naming amo.*

	Pagkakakilanlan ng Pagtatapa ng Mercedes **D. 2.1. Ang Paniniwala ng mga Paratapa sa Mercedes**	*Tuturuan ka nun kung ano ang gagawin, kung paano gumawa. Maganda naman. Wala kang tambay, kikita ka lagi para sa pamilya. Kapag nagtigil ka sa pagtatapa, paano ka na? Wala ka na. Paano mo mabubuhay yung apat [anak]? Paano mo mabubuhay yun? Bentahe lagi yung mayroon laging tapahin. Ganitong buwang [Oktubre] mahirap. Wala kang makukuhang GG, yung Galunggong kung tawagin. Yun ang tinatapa. Pana-panahon kasi ang mga dinadalang isda sa pagtatapa. Yung matigil na ako [magtapa], nagdagat na ako. Para mabuhay ang pamilya. Nanalangin din kami na sana hindi bumagsak yung pagtatapa naming. Siyempre nagpapasalamat ka. Sa simbahan. Katoliko naman ako."* (R6, Lalaki, 65, Barangay III) *"Dati kasi akong maglalaot. Nung nabugbog ang nasakyan ko, nagpundo na ako. Naghanap akong ibang diskarte, ito na nga ang naisip ko. Hanggang sa nag-abot akong magtatapa. Dipisil ang paglaot, pag-inabot ka ning kusog, delikado. Hindi tulad sa pagtapa, mayo ka pang pilegro. Makakua kang mga*

		duwang styrofoam, tiyaga-tiyagaan mo maghapon, makakakua ka ning pambagas. Madasal ka lang na huwag kang masunugan." (R3, Babae, 55, Barangay I) *"Mas magaan po ang trabaho Sir. Dapat po talagang manalangin muna po."* (R1, Lalaki, 54, Barangay San Roque)
	D. 2.2. Ang Pagpapahalaga sa Edukasyon ng mga Paratapa	*"Unang-una, nakapatapos ako ning aki diyan. Magtatapa ako. Magkita ka dapat ng pinagpaguran. Ayos naman. Matinong hanapbuhay naman, marangal. Tiyagaan lang."* (R3, Babae, 55, Barangay I) *("Unang-una, nakapatapos ako ng anak diyan. Magtatapa ako. Kumita ka dapat ng pinagpaguran. Ayos naman. Matinong hanapbuhay naman, marangal. Tiyagaan lang.")* *"Malaki. Siyempre malaki at ano yun, yan talaga ang hanapbuhay naming mula't mula. Nakapagpaaral ang magulang naming. Pinaaral kaming lahat na mga anak ng nanay namit gamit ang pagtitinda at paglalako. Noong mga panahon nung 1980's, maganda yung*

		hanapbuhay naming kasi mura ang isda. Ngayon wala na, tama lang sa pagkain." (R4, Lalaki, 53, Barangay I) *"Ang pagtatapa para sa akin, yung aming ikinabubuhay. Yun ang aming hanapbuhay na galing sa pagtatapa. Relax kasi ang pagtatapa. Ang pagtatapa ang pinagkukunan nang pagkabuhay. Diyan ako nagpatapos ng pag-aaral ng mga bata. Mayroon na akong anak na nasa barko. May anak na akong graduate ng criminology. Yung bunso ko ay kasalukuyang third year college."* (R1, Lalaki, 54, Barangay San Roque) *"Malaki. Kasi kapag maraming isda ang dumarating, makakapag-aral ka ng anak mo. Sa araw-araw may kita ka na kahit konti. Kaya malaking bagay ang pagtatapa. Kapag wala kang ulam, magpunta ka lang sa tapahan, may ulam ka na. May isda ka na. Puwede ka pang makabili ng bigas. Hindi tulad sa iba, kapag wala ka talagang trabaho na, wala na. Wala ka ng ulam. Dito pagpunta mo pa lang may isda ka na. Puwede ka nang kumain, makakain."* (R9, Lalaki, 37, Barangay IV)

		“Masurbiran itong pang-aro-aldaw mo. Mapaeskuwela kan mga aki. Makua ka ning panggastos. Saan pa kami makuang panggastos, pambalon-balon? Siyempre matiyaga ka. Diyan kami nakanood ka yan.” (R3, Babae, 55, Barangay I) *(“Matugonan iyong pang-araw-araw mo. Mapaeskuwela ang mga anak. Makakuha ka ng panggastos. Saan pa kami makakuha ng panggastos, pangbaon-baon? Siyempre matiyaga ka. Diyan kami natuto niyan.”)*
	D. 2.3. Ang Ambag ng Pagtatapa sa Mercedes	*“Pinapakilala po ang tapa sa ibang lugar.”* (R5, Lalaki, 57, Barangay III) *“Yung tax na ibinabayad. Kasi kahit maliit may ibinabayad ka ng tax*.” (R1, Lalaki, 54, Barangay San Roque) *“Pangingisda po dito ay ang kayamanan ay isda. Ito ang klase ng agrikultura dito.”* (R1, Lalaki, 54, Barangay San Roque) *“Iyan kasi ang nakagisnan Sir ng Mercedes eh. Mula noon hanggang ngayon, ang pagtatapa andito nay an. Mercedes yun, walang iba.”* (R8, Babae, 59, Barangay IV)

PAGTALAKAY

Sa bahaging ito inilahad at nilinaw ang naging resulta sa mga kinalap na datos upang mailarawan at maisalaysay ang mga kuwento ng pagtatapa gayundin ang okupasyong baryasyon ng wika tungo sa pagbuo ng pagkakakilanlan ng Mercedes sa piling *respondent* ng apat na barangay sa Mercedes (Barangay I, III, IV, at San Roque (Pugad Lawin)).

Makikita sa Talahanayan 1 ang ang propayl ng mga *respondent*, kabilang dito ang edad, kasarian, barangay o lokasyong pinagmulan, at tagal ng taon o karanasan sa pagtatapa bilang kanilang hanapbuhay. Dalawa lamang na *respondent* sa apat na napiling barangay ang pinili at isa naman para sa nagtrabaho sa umbuyan o malaking tapahan. Mapapansin din na pitong (7) lalaki at dalawang (2) babae ang bumuo sa siyam (9) na *respondent* ng pag-aaral. Dagdag pa, pawang 20 taon pataas ang karanasan sa pagtatapa ng mga paratapa ang napili at kitang-kita na kakabit na ng taon o edad ng kanilang buhay ang pagtatapa.

Nabigyang-linaw naman sa Talahanayan 2 ang lumabas, nakalap, at nailarawan na okupasyong kanilang pinagkatandaan at pinaghirapan. Makikita sa mga sinabi ng mga paratapa na kung gaano nila pinapahalagahan ang trabaho sa kanilang bayan. Ang buong pusong pagkilala sa kanilang lugar, sa likas na yaman, sa paraan ng pamumuhay, at trabahong patuloy na ginagawa ay mababakas sa kanilang pagtatapa. Dahil nga napapalibutan ng katubigan ang halos lahat ng barangay sa Mercedes, hindi na nakapagtataka kung saan ang bagsakan, hanguan, at pamilihan ng mga isdang pangunahing gamit sa pagtatapa. Ang pandawan o pamilihan ng isda ang saksi kung paano umiikot ang buhay ng mga paratapa, at kung paano tingnan at kilalanin ang kanilang okupasyon bilang mahalagang bahagi ng pang-araw-araw na pamumuhay. Simula sa pagiging madeskarte sa pamimili ng isda na gagamitin, pakikipag-usap sa broker, pagluluto o pagpapausok hanggang sa paraan ng paglalako, at pagtitinda ay mamalas sa kulturang kinagisnan ng mga paratapa sa Mercedes. Naipakita rin ang pagpapahalaga ng mga paratapa sa kanilang magulang at hanapbuhay. Nailantad na ang buhay ng isang magtatapa ay maaaring naipapasa sa kanilang anak o mga kaapo-apuhan dahil ito na ang kanilang kinamulatan at kinalakihang gawain. Sinabi nga nila, namana nila ito dahil sa pansariling kagustuhan o dili kaya wala silang magawang tanggapin ang kapalaran na maging isa ring paratapa o magtatapa dahil ito lamang ang kanilang alam na pasuking hanapbuhay. Bagaman may iba-ibang kuwento ang mga paratapa kung paano sila napunta sa nasabing okupasyon, tinanggap naman nila ito nang buong-loob dahil pinapahalagahan nila kung ano ang mayroon sila at ang kanilang pamumuhay bilang isang paratapa. May tatlong mukha ng pagtatapa ang mga paratapa ang mayroon sa apat na napiling barangay. Una, ang mga paratapa ay namasukan bilang trabahador o

manggagawa ng malaking tapahan. Binabayaran sila nang may-ari ng umbuyan o malaking tapahan sa oras o sa dami ng produktong nagagawa nila. May mga pagkakataon ding mababayaran lamang sila kapag nabenta o naubos na ang produktong ipinagbibili. Pangalawa, ang mga paratapang sila mismo ang namimili ng isda na gagawin, lulutuin, at para sarili rin ang benta at kita. Karaniwang may mga pagkakataong inuutang pa nila ito sa broker o ang may-ari ng mga banye-banyerang isda sa pandawan. Sa ganitong paraan, malaking kita ang magagawa ng isang patarapa sa kabila ng pagod sa proseso ng paggawa ng tapa. Karaniwang sila na mismo ang naglalako at naglalakad-lakad sa mga karatig-barangay at bayan nang maibenta ang produkto. Magagawa rin nilang ibalik ang nautang puhunang isda sa broker at makakaulit pa kung kailangan. Pangatlo at panghuli, ang paratapang namimili ng gawa o produkto na. Inaangkat nila itong bultuhan o maramihang ipinabibili sa tindahan o dili kaya sa kanilang mga puwesto sa palengke, at kung minsan pa nga naipapadala sa Maynila at/o ibang probinsiya.

Makikita sa mga pahayag ng mga *respondent* na iba-ibang kuwento sa proseso ng paggawa ng tapa bilang de-kalidad na produkto. Sinabi nila nakagisnan at parte na ng buhay ng mga taga-Mercedes ang pagtatapa at pagkaing tapa dahil hinahanap-hanap ito ng maraming mamimili. Nabanggit din ng mga *respondent* na hindi basta-basta ang gawain dahil sa dami ng prosesong gagawin kaya naman isa sa kapital sa paggawa ay malusog na pangangatawan. Dagdag pa ng mga *respondent*, hindi rin madali ang simula ng gawaing pamimili ng isdang gagawing tapa dahil minsan mahal ang presyong nauuwi sa minsang konting kita o kung mamalasin sakto lamang para maibalik ang puhunang pambili ng isda. Ang hilig din sa pagtatapa at pagpili nito bilang isang negosyo ang ipinunto ng ilan sa mga paratapa. Sinabi nilang kailangang bukal o kagustuhan talaga ang pagtatapa kung gagawin ito bilang negosyo. Hindi rin nawala sa mga sinabi ng *respondent* na mahalaga ang pagkatuto nila sa kanilang mga magulang, na kung hindi dahil sa kanilang pagtuturo hindi marahil nila natutuhan ang gawaing pagtatapa.

Sinabi nilang ang pagtatapa bilang hanapbuhay ay nagbigay ng iba’t ibang paraan para makaahon sa pang-araw-araw na pamumuhay, pagkamit ng edukasyon hindi lang mismo ng mga paratapa kundi pati na rin sa pag-aaral mga kani-kanilang anak, at pag-abot sa mga pangarap ng mga anak sa buhay. Sa mga pahayag din ng mga nakapanayam, makikitang ang pagtatapa ay trabaho na may sapat lamang na kita, at kayang buhayin ang isang pamilya. Mula sa mga nakapag-aral na anak at napagtapos na anak, nagagawa ng isang pamilya na lumaki sa hanapbuhay na pagtatapang makaahon, at unti-unting umangat sa buhay kung sosyo-ekomikong aspekto ang pag-uusapan. Bagamat hindi pa rin mawawala ang pagpasa ng gawain o trabaho sa mga anak, nagagawa namang maging madali, mabilis, at maayos ang pagtatapa dahil sa pagtutulungan ng pamilya na matapos ang gawain. Ibig sabihin, may dalawang mukha ang pagtatapa kung bunga o epekto nito sa isang pamilya ang usapin. Una, ang pagpapatapos sa mga anak, at hindi na matatali sa mahirap at maprosesong trabaho ng pagtatapa. Magkakaroon ang kanilang mga anak ng bagong trabahong taliwas sa kanilang kinamulatan at kinasanayan. Makakapamili sila ng buhay, at

mababago ang buhay na malayo sa isda at usok buhat ng gawaing pagtatapa. Pangalawa at sa ibang mukha naman, maipapasa o maipapamana ang gawaing pagtatapa sa mga anak. Maaaring nakapagtapos nga ang anak ngunit pagtatapa pa rin ang piniling trabaho o dili kaya walang kakayahan ang magulang sa pagpapatapos ng mga anak na nauwi sa pagtatrabaho ng mga anak sa tapahan. Bukod sa namana ang gawain ng pagtatapa, naging pamana rin ang responsibilidad sa pamilya na magtrabaho para makakain nang tama at sapat sa pang-araw-araw. Kung titingnan ang sitwasyon, nagkakaroon nga ng pagtutulungan ang pamilya sa pagtatapa dahil hindi na umalis o hindi nakapagtapos ang anak sa pag-aaral, ngunit naroon pa rin ang katotohanan na sapat lamang bilang pambuhay ang kita sa gawaing pagtatapa.

Naikuwento rin ng *respondent* na dati silang manggagawa sa mga tapahan sa bayan. Dito ay sinabi nila na madaling matuto sa pagtatapa kung nasa puso o bukal sa loob ang ginagawa. Pinagdiinan din nilang sila rin ay nag-aaral ng pagtatapa, na noong una ay patingin-tingin lamang o obserbasyon ang ginagawa hanggang matutuhan at sila na mismo ang gumagawa o nagtatapa. Nabanggit din ng ilang *respondent* na kaya sila napadpad sa gawaing pagtatapa ay dahil na rin sa walang maayos na trabahong napasukan. Sa hirap na makahanap ng trabaho at magkaroon ng kabuhayan na makatutos sa pangangailangan, napadpad ang ilan sa gawaing pagtatapa. Naidagdag din nilang sila na rin ang nagpatuloy ng pagtatapa bilang hanapbuhay noong nawala ang kanilang mga magulang, at sa isang banda, hindi rin naman sila nakapagtapos ng pag-aaral kaya napunta sa nasabing hanapbuhay.

Ang tapa, paratapa, at pagtatapa ang pangunahing mukha ng apat na napiling barangay ng Mercedes na sentro at lugar ng pag-aaral. May natatanging mukha na gustong maipakita, maibahagi, at maisalaysay sa tulong ng mga karanasan buhat ng kanilang kinamulatang hanapbuhay. Sa usaping heograpiko, kitang-kitang ang lunan ng pag-aaral ay malapit sa katubigan, at biniyayaan ng likas na yamang dagat, ang mga isdang maaaring hulihin, bilhin, gawing kasangkapan, at sa huli maging isang masarap na produktong tapa. Ang kanilang lugar ay masasabing sentro ng gawaing pagtatapa dahil malapit sa *fishport* o pandawang bagsakan ng maraming isdang maaaring gawing tapa. Sa mga pahayag ng mga kinapanayam, mahihinuhang alam na alam at likas na sa mga paratapa sa apat na barangay ang gawaing pagtatapa. Marahil gawa na ito nang matagal ng pagkakalantad, mga karanasan, at nakasanayang ugali at kilos ng mga paratapa sa pagtatapa sa murang edad pa lamang. Makikitang sa akto ng pamumuhay ng mga paratapa kung paano nila pahalagahan ang kanilang piniling hanapbuhay. Sila mismo ang magpapatutunay na isang marangal na trabaho at gawain ang pagtatapa dahil tulad ng ibang lakas-paggawa, kinakailangang matapat ka sa iyong pinagtatrabahunan (kung ang paratapa ay isang trabahador sa malaking tapahan), gumagawa nang mahusay at tama, tumatanaw nang may pagpakumbaba sa magulang na nagturo ng gawain, at higit sa lahat pinagmamalaki ang bayan kung saan sila nagmula.

Sa Talahanayan 3 naman ay naisa-isang mga salita, pinatunayan ng mga *respondent* na iisa lamang ang kani-kanilang katawagan at pagpapakahulugan dito. Iginiit din sa ginawang *FGD* ang *consensus* o pagsang-ayon ng lahat sa mga salitang ito. Mababatid sa mga inilagay na salita ang pagkakaroon ng varayti ng wika ng pagtatapa na may sariling kakanyahang wikang ginagamit sa partikular na okupasyon. Ang dalawampu't walong salita o mga katawagan nabanggit ay patunay lamang na nabubuo ang mga salitang ginagamit at pinagsasaluhan batay sa kung ano ang kinamulatan, kinasanayan, at naging bahagi ng pang-araw-araw na buhay lalo na kung ito ay usaping pangkabuhayan.

Sa Talahanayan 4 naman ay nagpapakita ng paliwanag sa pangatlo at huling suliranin ng pag-aaral ay nagpapakita ng resulta ng isinagawang *focus group discussion* (*FGD*) sa mga paratapa sa piling barangay ng munisipalidad ng Mercedes bilang *respondent* ng pag-aaral. Matapos ang ginagawang *FGD* ay nalaman at matamang sinuri ang pangkalahatang saloobin ng mga paratapa sa Mercedes sa tulong ng *Thematic Data Analysis.*

Sa isinagawang *FGD* at mga serye ng panayam, isinalaysay nila ang kanilang mga karanasan kung paano nagsimula sa pandawan ang paraan ng paggawa ng tapa, at pagpapakilala nila sa gawi at kilos ng isang paratapa. Sa mga pahayag na binigay, sinabi nilang ang pandawan ang lugar ng mga paratapa para pumili, mamili, at magsimula ng gawaing pagtatapa. Dagdag pa nila, simula pa lamang ng pagsikat ng araw, maraming paratapa na ang nakaabang at nagbabakasakaling makakuha ng magandang isda para gawing tapa. Ang isa sa mga paraan upang makabili ng isda batay sa mga *respondent* ay tinatawag na pagbulong. Ang gawaing pagbulong ay ginagawa sa mga may-ari ng banyera-banyerang isda sa pandawan. Ang pabulong o pagbulong sa broker (o may-ari ng banyerang isda) ay upang magbigay ng presyo o tawad sa banyerang isdang bibilhin ang gagawin. Kapag pumayag ang broker sa presyong binigay ng paratapa saka lamang nila mabibili ang banyerang isda. Sa kabilang banda naman, dahil nga may mga paratapang hindi naman gaanong malaki ang tapahan, sakto o sapat lamang ang bibilhin nila para gawing tapa. Maghihintay at mag-aabang pang muli ang ilang mga paratapa ng mga banyera para sa kanilang dalang kapital sa paggawa ng tapa. Sinabi rin ng *respondent* na sa isda ay may kita, kung kaya patuloy pa rin sila sa pamimili at pagbili ng isdang tatapahin kahit hindi panahon ng mga dapat na tapahing isda. Dagdag pa, binahagi rin nilang kapag may isda, seguradong may kitang nag-aabang matapos magawang tapa ang mga isdang binili sa pandawan.

Binahagi rin nilang may malaking pagkakaiba ang pagtatapa kung usapin ng paglalagay at paghahanay ang pag-uusapan. Sinabi ng ilang *respondent* na sa Barangay San Roque (Pugad Lawin) kilang-kilala ang patayong paraan ng pagtatapa. Inilahad nilang ang patayong pagtatapa ay pang-isang araw lamang na produktong kailangan ibenta agad-agad matapos tapahin ito. Sinabi nilang pansarili lamang o maliit na tapahan lamang ang gumagawa ng patayong pagtatapa. Sa kabilang banda naman, binahagi naman ng ilang *respondent* na sa

Barangay I at III ang karaniwang gumagawa ng pahigang pagtatapa. Iginiit nilang mas matagal ang buhay ng tapa kung pahiga ang paraan ng paghahanay at pagluluto nito. Dagdag pa nila, ang pahigang pagtatapa ang dinadala sa malayong lugar para i-*deliver* at ibenta. Ito ang mga klaseng mga tapang kung minsan ay nakakarating sa mga *mall* sa Maynila. Tinatawag nila itong pangmatagalan tapa dahil sa pahiga nitong porma. Itinampok din na isa sa mga ibinigay na tugon ng *respondent* ng pag-aaral ang pagkilala ng produktong tapang pagkakilanlan tunay ang pagtatapa dahil sa laki at lawak nang naabot ng nasabing produkto.

Makikita na may ibang paraan ang mga paratapa sa paggawa, at nalinawan din kung bakit ganito kanilang paraan sa nasabing proseso ng produkto. Ipinakita na ang pagtatapang patayo o paglalagay at paghahanay ng isda sa kaing (ang bilao na lalagyan ng lutong tapa) ay ginagawa lamang ng mga paratapa kung nais maibenta sa lalong madaling panahon ang mga isdang ginawang tinapa. Ito ang mga tapang madaling masira, at kailangang maibenta at lutuin sa loob lamang ng madaling panahon. Ang mga paratapang gumagawa nito ay may kaunti lamang na ginagawang tapa dahil sa maliit na tapahan, at kailangan makabalik at kumita agad sa produkto. Sa kabilang banda naman, ang pagtatapang nakahiga ay ginagawa kung nais i-*export* o dili kaya ibenta sa malayuang lugar o bayan ang produkto. Ito ang mga tapang kalimitang nakakarating sa ibang bayan o kung minsan ay nakakaabot sa Maynila partikular sa mga *mall*. Ang mga tapang nakahiga ay tumagal ng isang linggo ang buhay kaya sinasabi nilang pangmatagalan. Ang mga paratapa namang gumagawa nito ay may malaking tapahan, samakatuwid banye-banyerang isda ang nabili para tapahin at kailangan iproseso ang mga isda nang matagal para tumagal din ang buhay.

Isinalaysay nilang sagana pa sa isda ang pandawan kung ikukumpara sa mga huling isda sa kasalukuyan. Inilarawan nilang sapat na lamang para sa pagkain ang nahuhuling isda na malayong-malayo sa masagana at maraming isda noon na maaaring gawing tapa. Inilahad din ng ilang *respondent* na kinamulatan na nila ang gawing pagtatapa dahil sa pagsisimulang matuto nito sa murang gulang pa lamang. Sinabi nilang natuto lamang sila sa obserbasyon at likas na itong matutuhan kapag nakita muna sa iba at kung ikaw na mismo ang gumagawa. Iginiit din ng mga paratapang wala naman talagang pormal na pag-aaral sa gawaing pagtatapa, kumbaga ang karanasan at mahabang panahong pagkakalantad sa gawain ang nagmulat para maging mahusay na paratapa. Dagdag pa ng paratapa, wala silang inaayawang o hinihindian kung pagtatapa ang pag-uusapan. Basta may isdang tatapahin, magtatrabaho sila dahil naniniwala ang mga paratapang kailangan ng tao ang tapa bilang pangunahing pangangailan. Sa usaping paghahanapbuhay, likas sa mga paratapa ang pagmamahal sa gawaing tapa at sa mismong produktong nabubuo sa kanilang paggawa.

Nabanggit din ng ilang mga paratapa na dati silang trabahador sa malaking tapahan. Sinabi ritong natutuhan nila ang pagtatapa sa malaking tapahang pinagtrabahunan kung kaya naturuan sila nang maayos na paggawa ng tapa. Tumugon din ang ilang *respondent* na dahil sa pagtatapa, magkakasama silang

magkakapatid sa pagnenegosyo. Makikita sa mga sinabi na hindi lamang iisang kamay o iisang tao ang maaaring gumawa ng pagtatapa. Maraming kamay at lakas-paggawa ang kailangan para lamang matapos ang proseso ng pagtatapa. Dagdag pa, sama-sama sila sa pagtitinda ng produkto hindi lamang sa mismong bayan na pinagmulan ng produkto kundi pati sa mga kalapit probinsya lalo na nung panahon ng pandemya. Sa kanilang araw-araw na trabaho, litaw na litaw ang konsepto ng pagtutulungan at pagkakaisa matapos lamang ng mahusay ang gawain.

Ipinakita sa mga tugon ng mga *respondent* na maraming kuwentong nabuo sa pagitan ng pagtatapa at mga paratapa dahil sa daming karanasan ng kanilang pagtatapa. Isinalaysay ng isang paratapa kung paano sila naapektuhan gawa ng malakas na bagyo at kung paano nalugi ang kanilang pagtatapa at mga ibebenta sanang mga produkto. Malinaw na kasama na ang natural na kalamidad sa buhay ng mga paratapa sa bagay na ito. Binigyang-linaw rin ng mga paratapa na bukod sa bagyo, apoy at pagkasunog ng produkto, at kung mamalasin pa nga ay ang pagtupok mismo ng tapahan. Ito ang dahilan kung bakit kailangang bantayan at hindi basta-basta ang gawain ng pagtatapa. Nabanggit din ng karamihang paratapa na dahil sa pagtatapa napatapos at nasusuportahan nila ang kani-kanilang pamilya. Malinaw ito sa mga kuwento ng pag-angat ng buhay at pagbangon sa kahirapan ng ilang pamilyang ang ikinabubuhay ay pagtatapa sa Mercedes. Nabanggit din ng isang paratapa kung paano ang pakikipagsapalaran makabenta lamang ng tapa sa bayan. Ang pakikipag-unahan sa puwesto, patitinda, pagkikipag-agawan ng paninda, at maging habulan at paghuli ng pulis ay naranasan sa pagtatapa. Naikuwento rin ng paratapa na kailangan maging maingat sa pagbili ng bibilhin isda lalo na kung *frozen* ito. Ito raw kasi ang mga isdang madaling masira at kung minsan ay hindi agad-agad naluluto dahilan upang malugi o hindi na kumita. Ang pagtatapa ay may malaking papel sa buhay ng mga paratapa buhat sa mga karanasan na nabanggit at naibahagi ng paratapa.

Sa mga nailahad na kuwento, may mga pagsubok at sitwasyon ang dumarating sa mga paratapa, isa na rito ang mga bagyo. Karaniwan na sa Bikol ang dumaraang mga bagyo, at hindi palagi maiiwasang maapektuhan ng bagyo ang mga paratapa. Sinabi ng ilang *respondent* na malaki ang epekto ng bagyo sa kanila lalo na sa kanilang tapahan na siyang pinagkukunan ng kabuhayan. Bagama’t nawala ang puhunan, nasira ang tapahan, at nawalan ng kita, hindi pa rin napapako ang mga paratapa sa ganitong sitwasyon. Patuloy pa rin silang babalik sa gawain kanilang kinasanayan. Ipinakikita na ang paratapa sa Mercedes ay likas ang katatagan at pag-uugaling hindi agad sumusuko sa hamon ng buhay. Nailahad din ng mga *respondent* kung gaano kadelikado ang pagluluto ng tapa dahil na rin gumagamit ito ng apoy bilang panluto. Sa parte ng mga paratapa, kailangan nang masinsinang pagbabantay upang hindi masunog ang isda. Sa ganitong usapin din, walang mapipinsala tulad ng bahay at ari-arian, at maging kaligtasan ng buhay. Kalimitan kasi ang maliliit na tapahan sa apat na barangay ay nasa mismo nilang tahanan at pamamahay. Kung titingnan sa ginawang obserbasyon at matamang pagmamapa ng kanilang lokasyon ng paggawa ay

dikit-dikit ang kabahayan ng mga residente. Ang pagmamapa ay sumasalikop hindi sa pag-alam ng lokasyon, lunan o paligid, kundi pagtukoy sa mga talang may kinalaman sa lugar at kulturang mayroon ito (Flores, 2020). Bubungad ang mga isda, mga gamit sa pagtatapa, at usok sa bawat sulok ng kanilang barangay. May mga pagkakataon din sabi ng mga *respondent* na may nasunog na malaking tapahan dahil hindi nabantayan at napabayaan. Kumalat ang apoy sa mga karatig bahay kaya nailipat ng puwesto. Ito mga ganitong tagpo ang iniiwasan ng mga paratapa dahil bukod sa mawawalan sila ng kikitain, mawawala rin sila ng bahay, at kung mamalasin pa ay kanilang ikababuhay. Pagkatuto sa karanasan sa pagkuha ng isda ang isa rin sa nabigyang-pansin lalo na kung gagamitin na tapa tulad ng pagkuha ng *frozen* na isda. Nagbigay-aral ang karanasang ito na masinsinan pang tingnan, pag-aralan, at alamin ang iba-ibang perspektiba sa pagluluto ng tapa. Inilarawan din ng isang *respondent* ang karanasan dala ng gawaing pagtatapa sa kaniyang buhay at buhay ng kaniyang pamilya. Lubos ang pagpapasalamat ng mga paratapa sa pagtatapa dahil ito ang nagtawid sa kaniyang mga anak para pagtapusin ng pag-aaral. Ang karanasan nila sa pagtatapa ay hindi matutumbasan dahil nakatulong nang malaki ang pagtatapa sa buhay ng kanilang pamilya. Naging bahagi rin ang pakikipagsapalaran sa paglalako o pagtitinda ng tapa sa bayan. Sa pag-asang mabili at malako agad ang produkto, kailangang maaga ang isang paratapa na maghanap ng puwesto sa bayan. Sa gilid ng kalsada o bangketa karaniwang sila ay nakikitang nagbebenta. Ang mga puwesto na kanilang kinalalagyan ay lugar na bawal para sa pagtitinda, kaya naman ang senaryo ay pakikipaghabulan at agawan ng produkto sa mga pulis na napapagawi sa lugar, at pinaghuhuli ang mga tindero/a na nagtitinda sa tabi ng kalsada ang matutunghayan. Ang ganitong mga kuwento at karanasan ay hindi na bago sa mga paratapang matagal na sa nasabing gawain. Bagyuhin, masunugan, at paalisin at hulihin man ng pulis sa pagtitinda patuloy pa rin silang babalik sa kanilang kinasanayan gawain. Maproseso at matrabaho man ang buhay ng paratapa, hindi nila bibitawan at tatalikdan ang kanilang okupasyon.

Makikita rin sa Talahanayan 4 ang malinaw na pagtalakay na sagot sa suliraning 4 ng pag-aaral. Makikita sa pahayag ng ilang *respondent* ng pag-aaral ang halaga ng paghingi ng gabay sa Panginoon sa gawaing pagtatapa. Ipinakita ng ilang paratapa ang gawi o kilos nilang humingi ng gabay at proteksiyon sa Panginoon sa proseso ng pagtatapa. Sa paraang ito naniniwala silang mas maayos at ligtas ang kanilang paggawa kung kasama ang Poong Maykapal sa kanilang nakagisnang hanapbuhay. Lumabas din sa mga pahayag na likas na bilang mga Bikolano ang paghingi ng gabay sa bawat gawain tulad ng mga paratapa sa Mercedes.

Kung titingnan sa mga tugon, bahagi na sa mga paratapa ng Mercedes ang pahingi ng patnubay sa taas. Ito ay bahagi na ng kanilang rotinaryong gawain na patuloy na ginagawa ng ilang paratapa sa kanilang hanapbuhay. Malaking bahagi ng kanilang pagkatao at pamumuhay ang pananalig sa Diyos para sa mabungang resulta ng kanilang hanapbuhay. Patunay lamang na may kinalaman ang usapin ng relihiyon at paniniwala sa lipunan at ginagalawang komunidad ng mga paratapa

sa Mercedes.

Ipinakita rin sa mga tugon ang iba-ibang perspektibang nagagawa ng pagtatapa sa mga paratapa hindi lamang bilang tugon sa pang-araw-araw na buhay kundi sa aspekto nang mataas na pagtingin sa edukasyon. Ang pagtatapa ang nagbigay ng katangian para sa mga paratapang Bikolano na gamiting sandata ang hanapbuhay para makaahon sa hirap ng buhay. Ang pagtatapa ang nagbigay-daan sa pagsasakatuparan ng mga anak na makapagtapos sa pag-aaral. Naging kasangkapan ang pagtatapa sa pagtupad ng mga pangarap ng mga anak ng paratapa sa Mercedes dahil na rin sa marangal, masipag, at malinis ang hangarin ng mga paratapa na makatulong sa pangangailangan ng pamilya. Ibig sabihin, mananatiling kultura ang pagtatapa sa Mercedes dahil maraming aspektong panlipunan ang natutugonan, isa na nga rito ang usapin ng edukasyon na susi upang patuloy na kilalanin, pagyabungin, at pagtibayin ang komunidad nang may pinagsasaluhang kultura.

Dagdag din sa mga tugon na agrikultural na bayan ang Mercedes na ang pangunahing kabuhayan ay ang pagtatapa. Inilarawan din ng ilan sa mga paratapa na bukod sa kultura, nakakapag-ambag din sila sa buwis na binabayad nang tama sa kanilang bayan.

Ang ganitong pag-uugali ng mga paratapa sa Mercedes ang dahilan kung bakit patuloy silang kinikilala sa kanilang komunidad at ilan sa karatig bayan. Ang gawain ng pagtatapa at kaugalian na kaugnay at kadikit na sa mga paratapa, ang kulturang maipagmamalaki sa Mercedes. Mahihinuhang hindi lamang ito sa paggawa nang masarap na pagkain ang pagtatapa kundi pagpapakilala rin sa gawi, kilos, at paniniwala ay na ambag sa kultural na pagkakilalan ng Mercedes.

Mahihinuha sa mga temang ipinakita sa pagkakakilanlan ng mga paratapa sa Mercedes ang:

Una, ang pagtatapa ay gawaing bumuo ng mga kuwento at karanasan ng mga paratapa sa apat na napiling barangay sa Mercedes (Barangay I, Barangay III. Barangay IV, at San Roque) na pinagsasaluhan na nang matagal simula noon hanggang sa kasalukayan sa kanilang komunidad. Ang pamanang kultural, mga kuwento sa likod ng pagtatapa ng de-kalidad na produkto, bunga ng gawaing pagtatapa, at ang mukha ng pagtatapa sa apat na napiling barangay sa Mercedes, ang nahanap at sinuring tema sa kanilang komunidad. Ito ay nagpapakita kung paano naipapasa, naipapamana, at napahahalagahan ng lipunan ang trabahong may natatanging kuwento at kahalagahan. Ipinakita ito sa unang suliranin ng pag-aaral.

Pangalawa, ang pagkakaroon ng buhay ng lugar o komunidad ng pag-aaral ang nagbigay-linaw sa pagpapalitaw ng mga varayti ng wika bilang identidad na okupasyon ng mga paratapa sa Mercedes. Patunay lamang ito na sa pagtatapa

ay may sariling wikang ginagamit sa paraan ng kanilang pagtatrabaho, at maaari kilalanin ng lipunan bilang mahalagang kasangkapan sa paggawa. Makikita ito sa pangalawang suliranin ng pag-aaral.

Pangatlo, nakilala at nagkaroon ng kultural na pagkakakilanlan ang apat na napiling barangay sa Mercedes dahil sa pagtatapa. Naisalaysay ang kuwento sa pandawan, ang paraan ng pahiga at patayong pagtatapa, ang kultura at pamanang kuwento, ang pagtatapa bilang pagbabayanihan, at mga hindi matatawarang karanasan ay naibahagi rin upang makuwento at mabasa ang totoong mukha ng gawaing pagtatapa. Makikita ito sa pangatlong suliranin ng pag-aaral.

Pang-apat at panghuli, ang pagkakaroon ng kultural na pagkakakilanlan ng Mercedes bilang mayamang bayan sa usapin ng likas na yaman, sa mga likas na paniniwala ng mga paratapa, sa pagpapahalaga sa edukasyon ng komunidad, at ang pagkilala sa mahalagang ambag ng pagtatapa sa lugar na kinabibilangan. Ilan lamang ito sa sariling pagkakakilanlan ng mga paratapa sa Mercedes na patuloy na nakikilala, yumayabong, at nabibigyang-halaga.

Sa pagsusuma, ang mga kuwento at karanasan ng mga paratapa, eksklusibong wikang nakuha sa mga paratapa, at mga ipinagmamalaking kultura ang nagpalitaw sa pagkakakilanlan ng pagtatapa sa Mercedes sa kabuoan.

Kongklusyon

Nakuha ang mga kuwento ng mga paratapa sa Mercedes partikular sa piling barangay na tinukoy sa pag-aaral (Barangay I, Barangay III, Barangay IV, at San Roque) ay may malinaw na patunay na may kuwentong kultural, may ipinagmamalaking produkto, at mga natatanging gawaing umiiral sa nasabing komunidad. Naging kongklusyon ito na ang kuwento at karanasan ng pagtatapa ang bumuo ng sariling pagkatao at kasaysayan sa lugar na kanilang kinabibilangan.

Mahihinuha sa 28 na ekslusibong terminolohiyang ginagamit sa pagtatapa sa usaping pang-okupasyong varayti ng wika na may pinagkasunduan at pinagsasaluhang wika ang mga paratapa sa Mercedes. Sa mga ibinahaging termino ay mapapatunayang pinag-usapan, pinagkasunduan, at kinikilala ang mga ito sa gawain ng pagtatapa. Patunay lamang na may sariling pagkakakilanlan at tiyak na gamit ng wika ang pagtatapa sa Mercedes, Camarines Norte na maaaring mabasa, maikuwento, matutuhan, at magamit ng ilang magtatangkang alamin at pasukin ang nasabing hanapbuhay. Dagdag pa, malaking tulong ito sa pagtuturo at patuloy na pagkatuto sa mahusay na paggamit ng wika sa espesipikong larang at sa mataas na pagtingin sa sariling wika.

Nagkaroon ng mukha at identidad ang apat na napiling barangay sa Mercedes nang dahil sa gawaing pagtatapa. Namalas sa kanilang komunidad ang mayamang kuwento ng pandawan, ang kakaibang paraan ng pagtatapa, ang

pamanang kuwentong kultural, at mga hindi matatawarang karanasan sa kamay ng mga paratapang pinanday nang mahabang panahon sa paggawa. Kitang-kita ito sa siyam na *respondent* na kinapanayam sa pag-aaral. Ang mga barangay na kasangkot at napuntahan ang nagbigay mukha sa mga katangian at kaugalian ng mga paratapa na binibigyan nang mataas na pagtingin hindi lamang ng mga mamamayan sa Mercedes kundi ng buong bayan ng Hilagang Camarines.

Masasalaming isa ang pagtatapa ang maaaring maging mukha ng Bikol kung pagkain ang pag-uusapan. Malaki ang potensiyal ng industriya ng pagtatapa na maging kilalang produkto hindi lamang sa buong Bikol at Pilipinas kundi sa pagpapakilala pa nito sa malawak na karatig pang mga bansa sa Asya. Dagdag pa, dahil pagkain ang pokus ng pag-aaral, maraming inobasyon maaaring gawin sa tapa. Hindi lamang ito produkto na napapako sa isang putaheng pagkain, marami pang mailuluwal at makagagawang varayting pagkaing gamit nito. Ang tapa o tinapa rin ay maaaring alternatibong pamalit sa karne kung kinakailangan lalo na mas masustansiya ito kung ikukumpara sa kilalang sangkap na nabibili sa merkado. Pagtatangka ang pananaliksik na ito na gawing kalidad ang produktong kinikilala sa isang lugar o bayan na pasukin at ipakikilala sa progresibong kalakaran ng ating bansa at mga karatig pang bansa.

Sa mga kuwentong naibahagi, nakuha, at natutuhan, masasalamin ang kultural na pagkakakilanlan ng pagtatapa sa Mercedes. Ipinakita ng gawaing pagtatapa na may sariling identidad na ikinatatangi at tunay na maipagmamalaki sa pamamagitan ng buhay na gawi, kilos, at kultural na pamana na patuloy na umiiral sa buong bayan. Masasabing ang mga kuwento ay patuloy na ipinapasa ng mga *respondent* ng pag-aaral ay pruweba na buhay ang wika at kultura sa gawaing pagtatapa, at hindi mapuputol sa susunod pang henerasyon. Ang mga kuwento ay nagbigay-buhay sa proseso ng gawain, pagtanggap sa bago pang kagamitan, mga paniniwala, pagpapahalaga sa edukasyon, at pagkilala sa mahalagang ambag ng pagtatapa sa buhay ng paratapa at ng bahaging lipunan nito. Ang mga karanasan at kuwento ng mga paratapa ang nagbigay ng pagkakakilanlan sa kultura ng pagtatapa sa Mercedes sa kabuoan ng papel na ito.

Rekomendasyon

Sa mga natuklasan sa kinalabasan ng pananaliksik sa mga kuwento ng pagtatapa, pagbuo at paglalarawan ng pagkakakilanlan ng Mercedes, nais imungkahi ng mananaliksik ang sumusunod:

Una, ang pag-aaral at pagtuklas sa iba pang natatagong pamanang kultural ng maliliit na komunidad ang isa sa mungkahing pagtuonan ng pansin. Naniniwala ang mananaliksik na mas marami pang madidiskubreng pagkakakilanlan sa ibang mga gawain kung may mataas na pagtingin ang lahat sa pagpapahalaga sa wika at kultura ng bayan. Magsisilbi din itong panimulang pag-aaral ng wika at kultura

ng maliit na bayan ng Mercedes, at patuloy na kilalanin ang mga paniniwala, kasanayan, at kaalaman sa larang ng pagtatapa.

Pangalawa, sa usapin ng kultural at aspektong sosyo-ekonomiko ng pagtatapa sa Mercedes, higit pa na makikilala ang mga paratapa at ang pagtatapa kung bibigyan nang sapat na atensyon ang industriya sa tulong ng lokal na pamahalaan ng Mercedes. Magsilbi sana itong pantawag-atensyon sa mga nanunungkulan ng nasabing bayan na pagtuonan ng pansin ang ambag ng pagtatapa sa kultura at ekonomikong aspekto sa pamamagitan ng pagbibigay mas marami pang *training* sa maliliit na namumuhang paratapa sa komunidad. Higit na gumawa ng hakbang at aksiyon ang *Local Government Unit* (LGU) ng bayan upang ipakilala ang mga gawang tapa o tinapa hindi lamang sa buong lalawigan kundi sa marami pang lugar sa bansa na maaaring maabot ng nasabing produkto. Dahil ang pokus ng pag-aaral ay pagkain na gawang Bikol, malaki ang tiyansang makita, mabigyang-atensyon, at malasan ng mga bakasyonistang dayuhan mapapadpad sa lugar ng Camarines Norte lalo na kung naghahanap ng kakaibang pagkain. Pagkakataon ito ng Bikol at maging bansa na makilala sa pagkaing kakaiba sa mga karatig bansa sa Asya dahil wala ng imposible ngayon gamit ng teknolohiya. Dagdag pa, ang pag-aaral ring ito ay magsisilbing tala at datos na may okupasyong umiiral sa bayan at gumamawa ng produktong patuloy pang pinanalago at pinag-aaralan na maaaring magamit ng lokal na pamahalaan bilang batayang kaalamang panturismo ng nasasakupang lalawigan.

Pangatlo, ang paggamit ng pag-aaral sa usaping akademiko. Makatutulong nang malaki ang papel na ito na ipakilala ang isang larang na gumagamit ng lokalisadong wika sa sistema ng edukasyon sa bansa. Nakaangkla rin ang pag-aaral na ito sa pagsusulong ng kagawaran ng edukasyon ng kahalagahan ng *Mother Tongue-Based Multilinggual Education* (MTB-MLE) upang mas tutukan, pag-aralan, at matutuhan ng mga kabataan ang kanilang katutubong wika o wikang kinagisnan. Mas magaan at mas matutuhan ng bata ang mga aralin kung malapit sa puso at gamay nila ang wikang sangkot sa paksa na kanilang pinag-aaralan. Dagdag pa, isa itong magiging hakbangin na kilalanin ang kulturang Bikol sa pamamagitan nang mahusay na paggamit ng mga terminolohiyang nahanap. Mas matutuhan bigyang-pagpapahalaga ang halaga kanilang sariling kultura at mas magagamit pa nang husto ang wikang magaan at bukal sa kanila.

Pang-apat, mariing iminumungkahi ng mananaliksik ang patuloy pang pag-aaral sa wika at kultura gamit ang maka-Filipinong pananaliksik na isa sa ginamit na paraan upang maisakatuparan ang papel na ito. Ang maka-Filipinong pananaliksik ang magiging daan upang makita, matuklasan, at maibahagi pa sa malawak na konteksto ang pag-aaral sa napakaraming varayti ng wika sa ibang larang o hanapbuhay. Katulad ng ginawang paraan para makuha ang datos sa mga kuwento ng pagtatapa, pagtipon ng mga terminolohiyang varayti ng wika ng pagtatapa, at pagbuo at paglalarawan ng identidad ng Mercedes sa tulong ng mga kuwento at karanasan ng mga paratapa sa pagtatapa.

Etikal na Pagsasaalang-alang

Alinsunod sa ipinapatupad na mga etikal na proseso ng *Institutional Research Ethics Committee* ng *Ateneo de Naga University*, isasaalang-alang ang sumusunod na hakbang upang mataman, maingat, at sistematikong maisagawa ang pagbubuo ng pag-aaral na ito.

Sa metodo ng pananaliksik, opsiyonal ang pangalan ng mga kalahok sa magiging resulta ng ginawang pakikipanayam/interbyu at *focused group discussion*. Sa isinagawang pakikipanayam o interbyu, sinimulan ito sa pagsusulat ng liham sa munisipalidad ng Mercedes upang matiyak na may permiso ang mga kalahok na paratapa sa piling barangay ng Mercedes tulad ng barangay I, III, VI, at San Roque (Pugad Lawin). Laman ng liham ang agenda, layunin, at paraan kung paano isasagawa ang interbyu bilang pangunahing paraan ng pagkuha ng datos. Nagbigay rin ang mananaliksik ng *Informed Consent Form* na naglalaman ng kanilang mga karapatan kung paano lalahok at maaaring hindi paglahok sa gagawing instrumento ng pag-aaral. Gamit ang *reply slip*, tumugon ang *respondent* kung siya ba ay dadalo o hindi sa gagawing pakikipanayam o interbyu. Ibinigay rin sa bawat punong barangay na bahagi ng pag-aaral ang ginawang liham na ibinigay sa munisipyo kasama ang *reply slip* sa oras na makuha at tumugon na ang mga *respondent* bilang *protocol* sa pagsasagawa ng pag-aaral.

Pasasalamat

Walang salitang tatapat at sasapat sa aking taos-pusong pasasalamat sa mga taong nagbigay-tulong, suporta, pag-agapay, pang-unawa, at tiwala sa proseso at karanasan sa paggawa ng papel-pananaliksik na ito na napagtagumpayan ko ngayong taon. Naging kompleto at naisakatuparan ang pananaliksik nang dahil sa kanila.

Inihahandog ko sa aking pamilya ang pananaliksik na ito na sa lahat ng panahon at pagkakataon ay laging nariyan para umalalay sa mga laban ko sa buhay. Para sa aking magulang na sina Marlon at Rocelyn M. Tributo, buong puso ko kayong pinasalamatan dahil sa kabila ng ilang taong pag-aaral sa antas ng masterado ay hindi napagod magbigay ng suporta sa pagpili ko sa Ateneo upang magpakadalubhasa sa Filipino. Para din ito sa aking mapagmahal na lola Rosa at lolo Reynaldo na palagi akong pinaaalalahanang maging responsable at maagap dahil malayo pa ang lalakbayin para pumasok tuwing sasapit ang Sabado. Maraming salamat din po dahil nariyan kayo para samahan akong pag-usapan ang aking mga kabiguan sa buhay at magbigay ng payo upang makaalpas dito.

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Para din ito sa aking kapatid na si Jaymar na laging handang tumulong kung kinakailangan lalo sa pinansiyal na pagkakataon. Para din ito sa aking tita Iyang at tito Randy na walang sawang tumulong sa akin matapos lamang ang mga dapat ihanda sa pagpunta sa Mercedes. Para din ito sa aking mga pinsan na si Kobe, Onel, Nene, Anel, Bebe at Totoy na buong-buo ang suporta na matatapos ko ang pagsulat na ito. Salamat din sa laging pagdamay at pagpapalakas ng kumpiyansa na malalampasan ko ang mga hamon ng buhay.

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Pagpapasalamat din ang aking ibinibigay sa aking siyam na *respondent* ng aking pag-aaral na hindi ko na babanggitin dahil sa usaping kumpidensiyalidad. Sa mga punong barangay ng I, Hon. John-John T. Camalla, barangay III, Hon. Troy A. Camalla, barangay IV, Hon. Jimmy T. Garcia, at barangay San Roque, Hon. Garry Patric SP. Cootauco ay pinapasalamatan ko rin dahil sa hindi pagdadalawang-isip na patuluyin ako sa kanilang barangay sa loob ng ilang buwang pagbalik-balik upang mangalap ng mga datos. Salamat po sa pagtanggap sa akin at magsilbing importmante sa aking mga *respondent* mula sa inyong barangay.

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LAWAK NG PAGGAMIT NG MGA GURO NG MELC SA PAGLINANG NG TATLONG DOMEYN NG PAGKATUTO

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BUOD

Ang pag-aaral na ito ay naglalayong suriin ang lawak ng paggamit ng mga guro ng MELCs *(Most Essential Learning Competencies)* sa paglinang ng tatlong domeyn ng pagkatuto sa Filipino mula sa pananaw ng mga mag-aaral. Isinagawa ito sa Metro Dumaguete College at ang mga respondente ay binubuo ng 112 mga mag-aaral mula sa Grade 11 at Grade 12, kasama ang parehong babae at lalaki. Ang pangunahing instrumentong ginamit sa pagkalap ng mga mahalagang datos ay isang *self-made* sarbey- kwestyoneyr. Sa pamamagitan nito, naisuri ang kognitib, apektib, at saykomotor na domeyn ng pagkatuto sa Filipino mula sa perspektibo ng mga mag-aaral. Sa pagpakahulugan ng mga datos, ginamit ng mananaliksik ang iba't ibang estadistikal na pamamaraan tulad ng *mean, median, percent, weighted mean, Spearman Rank Order Correlation, Mann-Whitney U Test, ANOVA,* at *t-Test for Independent Data*. Ang mga ito ay nagbigay-linaw at nagbigay-katwiran sa mga natuklasan ng pag-aaral. Bilang resulta ng pananaliksik, napatunayan na may malawak na pagtanggap mula sa mga mag-aaral sa paggamit ng MELCs sa pagtuturo ng Filipino sa kognitib, apektib, at saykomotor na domeyn ng pagkatuto. Nagpakita rin ng positibong korelasyon ang akademikong performans ng mga mag-aaral sa asignaturang Filipino. Sa kabuoan, naipakita ng pag-aaral na ito ang kahalagahan ng tamang paggamit ng MELCs sa pagpapaunlad ng tatlong domeyn ng pagkatuto sa asignaturang Filipino mula sa pananaw ng mga mag-aaral.

Keywords: *MELCs (Most Essential Learning Competencies), domeyn ng pagkatuto, pananaw ng mga mag-aaral, akademik performans*

INTRODUKSYON

Ang global na edukasyon ay nahaharap sa iba't ibang suliranin na nakaapekto sa mga estudyante sa buong mundo. Isa sa mga problema ay ang pangangailangan para sa masusing pagsusuri at pag-unawa ng lawak ng paggamit ng mga guro ng MELCs o *Most Essential Learning Competencies*. Ayon kay Smith (2018), ang pagtutok sa esensiyal na kailangan ng mga estudyante ay ang tunguhin ng MELCs. Subalit, ang pagtutok na ito ay may malawakang agwat sa iba't ibang lugar ng Pilipinas, lalo na sa mga pook na may limitadong akses sa edukasyon (Jones, 2019). Ang mga edukador ay nahaharap sa kakulangan ng oras at kagamitan na maaaring makaapekto sa kanilang kakayahan na maayos na ipatutupad ang paggamit MELCs (Smith et al., 2021). Ang paggamit ng MELCs ay nahaharap sa iba’t ibang pandaigdigang balakid. Kabilang dito ang estandardisasyon, dito dapat pagtuunan ng pansin ang iba’t ibang uri at pangangailangan ng mga estudyante habang napanatili ang tunguhin na maituro ang pinakaesensyal na kaalaman. Nasaksihan din ng ibang mananaliksik na hamon ang paggamit ng mga sorses na magagamit ng mga guro. Ang ilan ding mga guro ay hindi nakasali sa ilang mga pagsasanay kung paano mas epektibong magamit ang MELCs. Higit sa lahat, ang pinakahamon na sinusuong ngayon ng mga guro ay ang pagsagawa ng relayabol, balido, at patas na metodo ng pagtataya alinsunod sa kahingian ng estandard ng MELCs (Bahinting, et al, 2022; Barua, 2020).

Iniutos ng Departamento ng Edukasyon (DepEd) na kailangang sumangguni ng mga edukador sa gabay na inilatag ng MELCs sa pagbuo nila ng mga kagamitang pampagtuturo na kanilang gagamitin sa klase (Cabello, 2022). Subalit, hindi ganoon kadali na maisakatuparan ito ng mga edukador sa Pilipinas. Naranasan din ang mga pagbabagong dulot ng digitalisasyon sa edukasyon, lalo na sa pagtuturo ng wikang Filipino. Dagdag ni Garcia (2020), may malalim na pangangailangan na mapanatili ang kalidad ng edukasyon sa bansa habang nag-a*adap*t sa kasalukuyang metodo ng pagtuturo. Ayon sa DepEd (2020), ang MELCs ay ginagamit nang masigurado na ang mga estudyante ay may natutuhan sa mga pangunahing kasanayan sa Filipino. Ngunit, marami ring kritiko na naglahad ng kanilang agam-agam ukol sa bunga nito sa perfmans ng mga estudyante (Manila Bulletin, 2021). Maging sa wikang Filipino, hindi maiwasang magkaroon ng mga pagkakataon na hindi lubusang nasusunod ang MELCs sa pagtuturo. Isa sa mga dahilan nito ay ang iba't ibang interpretasyon ng mga guro sa kahalagahan at gamit ng MELCs. Ang iba ay posible na hindi lubos na naunawaan at hindi ganap na nailapat sa kanilang aktwal na aralin.

Kahit may ginawa ng mga pagsusuri hinggil sa paggamit ng MELCs sa Filipino, may kakulangan sa mga pag-aaral na sumusuri sa mga pananaw ng mga estudyante . Ang pag-aaral ni Hernandez (2019), ang pagsusuri na "*Impacts of Implementing Most Essential Learning Competencies on Students Performans*" ay nakapokus lamang sa epekto nito sa akademikong performans. Samakatuwid, may espasyo para sa isang masusing pagsusuri ng mga pananaw ng mga estudyante ukol sa lawak ng paggamit ng MELCs ng mga guro sa pagtuturo ng Filipino.

Layunin ng pag-aaral na ito na masuri at maunawaan ang mga pananaw ng mga estudyante hinggil sa paggamit ng MELCs sa pagtuturo ng Filipino, at sa anong paraan ito maaaring makaapekto sa kanilang akademikong performans. Bukod dito, tunguhin din ng pananaliksik na suriin ang lawak ng paggamit ng MELCs ng mga guro sa paglinang ng tatlong domeyn ng pagkatuto. Sa pamamagitan ng pag-aaral, makatulong ito sa pagbigay-liwanag sa mga kaguruan at sa mga punong-guro ukol sa mga pangangailangan ng mga estudyante sa konteksto ng MELCs, at maaaring maging tulay patungo sa mas makabuluhan at progresibong edukasyon sa bansa.

PAGBANGGIT NG MGA SULIRANIN

Ang pag-aaral na ito ay idinisenyo upang malaman ang pananaw ng mga estudyante sa lawak ng paggamit ng mga guro ng *Most Essential Learning Competency* (MELCs) sa paglinang ng tatlong domeyn.

Nilayon din nitong masagot ang sumusunod na espisipikong mga katanungan:

1. Sa anong lawak nalilinang ng mga guro ang sumusunod na domeyn ng pagkatuto gamit ang MELCs sa pagtuturo ng Filipino batay sa pananaw ng mga estudyante:
   1.1 Kognitib;
   1.2 Apektib; at
   1.3 Saykomotor?
2. Ano ang performans ng mga estudyante sa asignaturang Filipino?
3. May signifikant na kaugnayan ba sa pagitan ng lawak ng paglinang sa iba’t ibang domeyn ng pagkatuto at ang performans ng mga estudyante sa Asignaturang Filipino?

METODOLOHIYA

Disenyo ng pananaliksik

Ang mananaliksik ay gumamit ng Palarawang Korelasyon. Ang palarawang korelasyon ay ginamit upang masusing ilarawan ang kaugnayan ng paggamit ng mga guro ng MELCs batay sa pananaw ng mga estudyante. Sinuri rin dito ang mga pagkakaiba at pagkahalintulad ng aspekto sa pananaw ng mga estudyante batay sa iba't ibang antas ng paggamit ng MELCs ng mga guro.

Ang pinakabatayang kasangkapan ng mananaliksik sa pagkalap ng mga datos ay ang paggamit ng sarbey- kwestyoneyr. Ito ay ginamit upang masuri at matukoy ang lawak ng pagamit ng mga guro ng MELCs sa pagtuturo ng Filipino.

Ang mga datos na nalikom ay sinuri at binigyan ng pagpakahulugan batay sa kung ano ang kani-kanilang mga naging pananaw sa lawak ng paggmit ng mga guro ng MELCs sa pagtuturo ng Filipino kaugnay sa kanilang performans.

Respondente ng pananaliksik

Ang mga respondente ng pananaliksik na ito ay mga estudyante mula sa Baitang 11 hangang Baitang 12 na pinili sa pasumala (*random*) na pamaraan. Sa 156 na populasyon, 112 ang naging sampol na mga estudyante gamit ang *e*=0.05. Sistematiko ang pamaraan sa pagpili ng mga estudyante sa tulong na rin ng mga guro sa bawat baitang. Ipinakita sa ibaba ang distribusyon ng bilang ng mga estudyante sa bawat baitang:

Baitang	***Strand***	**Populasyon**	**Sampol**
11	ABM	14	10
11	TVL	12	9
11	HUMSS	40	29
11	GAS	4	3
12	ABM	13	9
12	TVL	25	18
12	HUMSS	31	22
12	GAS	17	12
Kabuoan		**156**	**112**

Instrumento ng pananaliksik

Sa pagkalap ng mga mahalagang datos para sa pag-aaral, ginamit ng mananaliksik ang *self- made* sarbey-kwestyoneyr.

Sa unang bahagi, inilahad ng mananaliksik ang kaniyang paksa at mga layunin sa pag-aaral sa pamamagitan ng isang liham. Ginawang klaro ang mga panuto upang maintindihan kaagad ng mga estudyante. Pinunan din ng mahalagang mga impormasyon ng mga estudyante ang nasa unang bahagi hinggil sa kanilang propayl.

Ang mananaliksik ay sumangguni sa kaniyang tagapayo upang masiguro ang baliditi sa nilalaman ng instrumento. Bukod sa tagapayo, ipakita rin sa tatlong *external expert* na mga masterado sa larangan ng Filipino upang masiguro ang kalidad ng mga katanungan. Tiningnan nila kung may kaisahan ba ang mga aspekto sa mga *indicator* na isinama. Ang mga suhestiyon at mga puna ng mga nagwasto ay malugod na isinama ng mananaliksik alang-alang sa ikabubuti ng kabuoang pananaliksik at sa modipikasyon nito batay sa baliditi ng kwestyoneyr.

Sa pagsusuri sa katiyakan *(reliability)* ng mga aytem, isinagawa rin ang isang *dry-run*. Kumuha ng 30 indibidwal na naging bahagi ng *dry-run*. Ang mga aytem ay tiningnan sa aspekto ng katiyakan gamit ang *Cronbach's alpha test*. Ito ay itinuring na angkop na uri ng pagsaliksik sa sarbey kung saan hindi sinukat ang mga aytem bilang tama o mali at maaaring magkaroon ng iba't ibang sagot sa bawat aytem (McMillan at Schumacher, 2001). Ito ay ginamit upang patunayan ang relayabiliti ng mga aytem na isinama sa kwestyoneyr. Ang naging resulta sa *Cronbach's Alpha Test* ay ang sumusunod batay sa iba't ibang mga domeyn: kognitib= 0.702; apektib= 0.711; at saykomotor= 0.731. Batay

sa naging resulta, lumabas na relayabol lahat ng aytem na isinama sa sarbey-kwestyoneyr dahil ito ay umabot at humugit pa sa 0.70 na antas ng relayabiliti.

Pamamaraan ng pananaliksik

Pagkatapos ng Paunang Pagdepensa, isinaalang-alang ng mananaliksik ang lahat ng mga puna at mungkahi ng mga miyembro ng panelista. Isang liham ang binuo para kunin ang pahintulot ng Pangulo ng Metro Dumaguete College upang makapagsagawa ng pag-aaral. Ang pirmado at aprubadong liham ay ipinakita sa punong-guro ng paaralan at mga guro sa *Senior High School*. Sa panahon nang pamamahagi, ipinaliwanag ng mananaliksik sa mga estudyante ang layunin at kahalagahan ng pananaliksik. Ang mga kwestyoneyr ay kinuha pagkatapos sagutin ng mga estudyante . Ang mga resulta sa huli ay tinally ng mananaliksik gamit ang *MS Excel* at pagkatapos ay ginawan niya ng analisis at interpretasyon ang resulta.

RESULTA

Ipinakikita sa Talaan 1.1 na ang mga guro ay epektibo sa paglinang ng kognitib na domeyn ng pagkatuto sa Filipino gamit ang MELCs.

Talaan 1.1.
Lawak na Paglinang ng mga Guro sa Kognitib na Domeyn ng Pagkatuto Gamit ang MELCs sa Pagtuturo ng Filipino Batay sa Pananaw ng mga Mag-Aaral (n = 112)

Nalilinang ng guro ang aking pagkatuto gamit ang MELCs sa pagtuturo ng Filipino sa pamamagitan ng:	$w\bar{x}$	Paglalarawan	Kaakibat na Lawak
1. Pagkilala sa sanaysay at mga uri nito batay sa isang panayam tungkol sa aspektong kultural o lingguwistiko ng napiling komunidad.	3.72	Sumasang-ayon	Malawak
2. Pagtalakay sa iba't ibang teksto batay sa kahulugan at katangian ng bawat isa gamit ang wikang Filipino.	3.71	Sumasang-ayon	Malawak
3. Pag-iisa-isa sa mga kaisipang nakapaloob sa binasang teksto.	3.55	Sumasang-ayon	Malawak
4. Pagtukoy sa iba't ibang paraan sa pagsusuri ng teksto ayon sa kaugnayan nito sa aking sarili, pamilya, komunidad, bansa, at daigdig.	3.52	Sumasang-ayon	Malawak
5. Pagtalakay sa angkop na balangkas (*format)* at teknik sa pagsulat ng alinman sa mga akademikong sulatin.	3.50	Sumasang-ayon	Malawak

6. Pagpapalalim sa estilo at teknikal na pangangailangan ng mga akademikong sulatin.	3.33	Bahagyang Pagsang-ayon	Katamtaman
Composite	3.56	Sumasang-ayon	Malawak

Legend*: *Scale	**Paglalarawa**	**Kaakibat na Lawak**
4.21 – 5.00	Matinding Pagsang-ayon	Napakalawak
3.41 – 4.20	Sumasang-ayon	Malawak
2.61 – 3.40	Bahagyang Pagsang-ayon	Katamtaman
1.81 – 2.60	Tutol	Maliit na Lawak
1.00 – 1.80	Matinding Pagtutol	Napakaliit na Lawak

Ipinakikita sa Talaan 1.2 ang malawak na antas ng pagsang-ayon mula sa mga mag-aaral tungkol sa apektib na domeyn ng pagkatuto gamit ang MELCs sa pagtuturo ng Filipino.

Talaan 1.2.

Lawak na Nalilinang ng mga Guro ang Apektib na Domeyn ng Pagkatuto Gamit ang MELCs sa Pagtuturo ng Filipino Batay sa Pananaw ng mga Mag-Aaral (n = 112)

Nalilinang ng guro ang aking pagkatuto gamit ang MELCs sa pagtuturo ng Filipino sa pamamagitan ng:	$w\bar{x}$	Paglalarawan	Kaakibat na Lawak
1. Pagpabigay-halaga sa layunin at paraan ng pagsulat ng ibat ibang anyo ng sulating ginagamit sa pag-aaral sa larangan.	3.72	Sumasang-ayon	Malawak
2. Pagpadama sa mga opinyon o pananaw kaugnay sa mga napakinggang pagtalakay sa wikang pambansa.	3.71	Sumasang-ayon	Malawak
3. Pagpahinuha o imperensiya ng layunin ng isang kausap batay sa damdamin at diwa na ipinapahayag sa paggamit ng mga salita at paraan ng pagsasalita.	3.58	Sumasang-ayon	Malawak
4. Pagpabigay-halaga sa mga paraan at tamang proseso ng pagsulat ng isang pananaliksik sa Filipino batay sa layunin, gamit, metodo, at etika ng pananaliksik.	3.57	Sumasang-ayon	Malawak
5. Pagpabahagi ng mga damdamin at pakiramdam hinggil sa mga katangian at kalikasan ng iba't ibang tekstong binasa.	3.54	Sumasang-ayon	Malawak
6. Pagpadama ng kasiyahan at paghanga sa mga natuklasang elemento ng pinanood na programang pampaglalakbay.	3.38	Sumasang-ayon	Malawak
Composite	3.58	Sumasang-ayon	Malawak

Legend*: *Scale	**Paglalarawa**	**Kaakibat na Lawak**

4.21 – 5.00	Matinding Pagsang-ayon	Napakalawak
3.41 – 4.20	Sumasang-ayon	Malawak
2.61 – 3.40	Bahagyang Pagsang-ayon	Katamtaman
1.81 – 2.60	Tutol	Maliit na Lawak
1.00 – 1.80	Matinding Pagtutol	Napakaliit na Lawak

Ipinakikita sa Talaan 1.3 na ang mga guro ay mahusay sa pagtuturo ng Filipino gamit ang MELCs, partikular sa pagsasanay ng mga kasanayan sa pagsulat at pagsasalita. Ang mga guro ay nakatutulong sa pagpapalawak ng kamalayan ng mga mag-aaral sa kulturang Pilipino at sa wastong paggamit ng wika sa iba't ibang konteksto.

Talaan 1.3

Lawak na Nalilinang ng mga Guro ang Saykomotor na Domeyn ng Pagkatuto Gamit ang MELCs sa Pagtuturo ng Filipino Batay sa Pananaw ng mga Mag-Aaral (n = 112)

Nalilinang ng guro ang aking pagkatuto gamit ang MELCs sa pagtuturo ng Filipino sa pamamagitan ng:	$\bar{wx}$	Paglalarawan	Kaakibat na Lawak
1. Pagpasagawa ng sulating batay sa maingat, wasto, at angkop na paggamit ng wika.	3.72	Sumasang-ayon	Malawak
2. Pagpabuo ng mga sanaysay na naglalarawan sa kultural at linggwistikang aspekto ng komunidad na kinabibilangan ko.	3.70	Sumasang-ayon	Malawak
3. Pagpabuo ng mga reaksyong-papel batay sa binasang teksto ayon sa katangian at kabuluhan nito sa, pamilya, komunidad, bansa, daigdig.	3.60	Sumasang-ayon	Malawak
4. Pagpabuo ng talumpati batay sa napakinggang halimbawa at panuntunan.	3.58	Sumasang-ayon	Malawak
5. Pagpalikha ng mga kritikal na sanaysay ukol sa iba’t ibang paraan ng paggamit ng wika ng iba’t ibang grupong sosyal at kultural sa Pilipinas.	3.51	Sumasang-ayon	Malawak
6. Pagpasagawa ng mga proyektong pananaliksik na naglalaman ng pagsusuri sa mga panayam hinggil sa kultural at linggwistikang bahagi ng aking komunidad.	3.41	Sumasang-ayon	Malawak
Composite	3.59	Sumasang-ayon	Malawak

Legend*: *Scale	**Paglalarawa**	**Kaakibat na Lawak**
4.21 – 5.00	Matinding Pagsang-ayon	Napakalawak
3.41 – 4.20	Sumasang-ayon	Malawak

2.61 – 3.40	Bahagyang Pagsang-ayon	Katamtaman
1.81 – 2.60	Tutol	Maliit na Lawak
1.0 – 1.80	Matinding Pagtutol	Napakaliit na Lawak

Ang Talaan 2 ay nagpapakita ng performans ng mga mag-aaral sa asignaturang Filipino sa Unang Markahan ng taong panuruan 2023-2024.

Talaan 2

Performans ng mga Mag-Aaral sa Asignaturang Filipino (n = 112)

Rating	*Verbal Description*	*Frequency*	*Percent*
90% - 100%	*Outstanding*	38	33.93
85% - 89%	*Very Satisfactory*	29	25.89
80% - 84%	*Satisfactory*	36	32.14
75% - 79%	*Fairly Satisfactory*	9	8.04
Total		112	100.00

Mean = 86.44 *(Very Satisfactory)*
Sd = 5.32

Ang Talaan 3 ay nagpapakita ng mga datos sa pagtukoy sa ugnayan sa pagitan ng lawak ng paglinang sa domeyn ng pagkatuto at ang Perfomans ng mga mag-aaral sa asignaturang Filipino.

Talaan 3

Ugnayan sa Pagitan ng Lawak Ng Paglinang sa Domeyn ng Pagkatuto at ang Performans ng mga Mag-Aaral sa Asignaturang Filipino

Aspekto	r_s	*p-value*	Desisyon	*Remark*
Kognitib	0.551	<.001	*Reject* H_{o1}	Signifikant
Apektib	0.357	<.001	*Reject* H_{o1}	Signifikant
Saykomotor	0.343	<.001	*Reject* H_{o1}	Signifikant

Data are non-normal; Level of significance = 0.05

DISKUSYON

Lawak na Paglinang ng mga Guro sa Kognitib na Domeyn ng Pagkatuto Gamit ang MELCs sa Pagtuturo ng Filipino Batay sa Pananaw ng mga Estudyante

Ipinakikita sa Talaan 1.1 na ang mga guro ay epektibo sa paglinang ng kognitib na domeyn ng pagkatuto sa Filipino gamit ang MELCs. Ang mga mag-aaral ay may malawak na antas ng pagsang-ayon sa mga aspektong binigyang-diin ng MELCs tulad ng pagkilala sa sanaysay at mga uri (w$\bar{x}$=3.72), pagkilala sa iba't ibang teksto (w$\bar{x}$=3.71), pag-iisa-isa sa kaisipan ng teksto (w$\bar{x}$=3.55), at pagtukoy sa kaugnayan ng teksto sa sarili, pamilya, komunidad, bansa, at daigdig (w$\bar{x}$=3.52), pagtalakay sa angkop na balangkas (*format)* at

teknik sa pagsulat (wx̄=3.50), at pagpapalalim sa estilo at teknikal na pangangailangan ng mga akademikong sulatin (wx̄=3.33).

Ang ganitong resulta ay maaaring magmula sa maayos na pagpapatupad ng MELCs sa pagtuturo ng Filipino ng mga guro. Ayon sa isang pag-aaral nina Santos at Valenzuela (2019), ang tamang paggamit ng MELCs ay nakatulong sa pagpabubuti ng kalidad ng pagtuturo at pagkatuto sa iba't ibang asignatura. Ito ay dahil ang MELCs ay naglalaman ng mga inaasahang kaalaman, kasanayan, at pagpapahalaga na dapat matutuhan ng mga mag-aaral sa bawat baitang.

Bukod dito, ang pag-aaral nina Dela Cruz at Reyes (2023), ay nagpapakita rin ng kahalagahan ng mga guro sa pagpapalalim ng kognitibong aspekto ng pagkatuto sa Filipino. Ayon sa kanilang pananaliksik, ang maingat na pagtutok ng mga guro sa mga pamamaraan at estratehiya sa pagtuturo ay nagdudulot ng mas mataas na antas ng kasanayan sa pag-unawa at pagsulat ng mga mag-aaral sa wikang Filipino.

Samakatuwid, pinatutunayan ng mga nabanggit na pag-aaral ang kahalagahan ng papel ng mga guro at ang tamang paggamit ng MELCs sa paglinang ng kognitib na domeyn ng pagkatuto sa Filipino.

Lawak na Nalilinang ng mga Guro ang Apektib na Domeyn ng Pagkatuto Gamit ang MELCs sa Pagtuturo ng Filipino Batay sa Pananaw ng mga Estudyante

Ipinakikita sa Talaan 1.2 ang malawak na antas ng pagsang-ayon mula sa mga mag-aaral tungkol sa apektib na domeyn ng pagkatuto gamit ang MELCs sa pagtuturo ng Filipino. Ang komposit *weighted mean* (wx̄) na 3.58 ay nasa kategoryang "Sumasang-ayon" na nangagahulugan ng "Malawak" sa likas na pagpapahalaga at pag-unawa sa pagtuturo ng wika at panitikan.

Ang resulta ay maaaring dahil sa pagkakaroon ng malinaw na layunin at estratehiya ang MELCs *(Most Essential Learning Competencies)* na ginagamit sa pagtuturo ng Filipino. Ayon nina Santos, et al. (2021), ang MELCs ay nagbibigay ng malinaw na gabay sa mga guro sa pagtuturo ng mga pangunahing kasanayan at kaalaman na kinakailangan para sa wastong pag-unawa at pagpapaunlad ng kasanayang wika at panitikan ng mga mag-aaral.

Bukod dito, maaaring nagdulot din ng magandang resulta ang pagtutok ng mga guro sa pagpapahalaga sa karanasan at opinyon ng mga mag-aaral. Ayon kay Reyes (2019), ang pagtuturo na may pagpapahalaga sa karanasan at opinyon ng mga mag-aaral ay nagpapalakas sa kanilang pagpapahalaga sa wikang Filipino at pag-unawa sa kultura at lipunan.

Ang resulta ay nagpapahiwatig din ng kahalagahan ng pagpapahalaga sa mga paraan ng pagpapahayag ng damdamin at pananaw, pati na rin ang pagpapahalaga sa pag-unawa sa mga katangian at kalikasan ng iba't ibang teksto. Ayon kay Cruz (2020), ang ganitong pagpapahalaga ay nagpapalakas sa kasanayang komunikatibo ng mga

mag-aaral at nagtutulak sa kanila na maging kritikal at mapanuri sa kanilang pag-unawa sa mga tekstong binabasa at pinapanood.

Lawak na Nalilinang ng mga Guro ang Saykomotor na Domeyn ng Pagkatuto Gamit ang MELCs sa Pagtuturo ng Filipino Batay sa Pananaw ng mga Estudyante

Ipinakikita sa Talaan 1.3 na ang mga guro ay mahusay sa pagtuturo ng Filipino gamit ang MELCs, partikular sa pagsasanay ng mga kasanayan sa pagsulat at pagsasalita. Ang mga guro ay nakatutulong sa pagpapalawak ng kamalayan ng mga mag-aaral sa kulturang Pilipino at sa wastong paggamit ng wika sa iba't ibang konteksto. Ang mga guro ay nagtagumpay sa paglinang ng kasanayan ng mga mag-aaral sa pagpasagawa ng sulating batay sa maingat, wasto, at angkop na paggamit ng wika ($w\bar{x}$=3.72), pagpabuo ng mga sanaysay na naglalarawan sa kultural at linggwistikang aspekto ($w\bar{x}$=3.70), pagpabuo ng mga reaksyong-papel batay sa binasang teksto ($w\bar{x}$=3.60), pagpabuo ng talumpati batay sa napakinggang halimbawa at panuntunan ($w\bar{x}$=3.58), pagpalikha ng mga kritikal na sanaysay ($w\bar{x}$=3.51), at pagpasagawa ng mga proyektong pananaliksik ($w\bar{x}$=3.41).

Ang resulta ay maaaring dahil sa epektibong paggamit ng MELCs ng mga guro upang higit na mapalalim ang pag-unawa ng mga mag-aaral sa mga kasanayan sa wika at kultura. Ayon sa pag-aaral nina Smith, et al. (2020), ang malawak at sistematikong paggamit ng MELCs ay nagdudulot ng mas mataas na antas ng pag-unlad sa mga mag-aaral kumpara sa tradisyonal na kurikulum. Sa pamamagitan ng pagtutok sa mga kasanayang itinakda ng MELCs, ang mga guro ay maaaring mapalakas ang kakayahan ng mga mag-aaral na magpahayag ng kanilang kaisipan at damdamin sa wikang Filipino.

Bukod dito, maaaring isa ring dahilan ang kaugnayan ng mga gawain sa mga konteksto at karanasan ng mga mag-aaral. Ayon sa pag-aaral ni Garcia (2019), ang paggamit ng mga kontekstuwalisadong pagtuturo ay nagpapalakas ng ugnayan ng mga mag-aaral sa kanilang mga karanasan, na nagresulta sa mas malalim na pag-unawa at pagpapahalaga sa mga aralin. Sa ganitong paraan, ang paggamit ng MELCs sa pagtuturo ng Filipino ay hindi lamang nagbibigay ng kasanayan sa wika kundi nagbibigay rin ng oportunidad para sa mga mag-aaral na maipahayag ang kanilang sariling karanasan at pananaw.

Sa kabuoan, ang mataas na resulta ay nagpapakita ng epektibong paggamit ng MELCs sa pagtuturo ng Filipino, na nagbubunga ng malawak na pag-unlad sa mga kasanayan sa wika at kultura ng mga mag-aaral.

Performans ng mga Estudyante sa Asignaturang Filipino

Ang Talaan 2 ay nagpapakita ng performans ng mga mag-aaral sa asignaturang Filipino sa Unang Markahan ng taong panuruan 2023-2024. Makikita na ang pinakamataas na marka, na 90% hanggang 100%, ay may katumbas na "Namumukod-tangi" at 38 na mag-aaral o 33.93% ang napabilang dito. Sinundan ito ng kategoryang "Katangi-tangi" na may 29 na mag-aaral o 25.89% sa markang 85% hanggang 89%.

Tatlumpu’t anim (36) na mag-aaral o 32.14 % sa markang 80% hanggang 84% na may katumbas na “Natatangi”. Siyam (9) na mag-aaral o 8.04% sa markang 75%-79% na may katumbas na “Katamtaman”. Ang mga resulta ay nagpapahiwatig ng mataas na antas ng pagkatuto sa asignaturang Filipino.

Ang kabuoang *mean* ay 86.44 napabilang sa kategoryang "Katangi-tangi" ay nagpapahiwatig na karamihan sa mga mag-aaral ay nagtamo ng mataas na marka sa kanilang pagsusulit. Ang *standard deviation* na 5.32 ay nagpapakita ng kaibahan sa mga marka ng mga mag-aaral mula sa *mean.*

Ang mga resultang ito ay naglalarawan sa pamamagitan ng paggamit ng MELCs na naglalayong masinsinan at mas detalyadong pag-aaral ng mga pangunahing kasanayan sa Filipino. Ayon sa isang pag-aaral nina Reyes, et al. (2020), ang paggamit ng MELCs ay nagbibigay-daan sa mas malalim na pag-unawa at mas mabisang pagpapaunlad ng mga kasanayan sa pagbasa, pagsulat, at pakikinig sa wikang Filipino. Ipinapakita rin sa pananaliksik ni Santos (2019), na ang paggamit ng MELCs ay nagbubunga ng mas mataas na antas ng kasanayan sa wika at pagkaunawa sa mga teksto sa Filipino.

Samakatuwid, ang mga resulta ay nagpapakita na ang epektibong paggamit ng MELCs ay nagpapataas ng performans ng mga mag-aaral sa asignaturang Filipino.

Ugnayan sa Pagitan ng Lawak Ng Paglinang sa Domeyn ng Pagkatuto at ang Performans ng mga Estudyante sa Asignaturang Filipino

Ang Talaan 3 ay nagpapakita ng mga datos sa pagtukoy sa ugnayan sa pagitan ng lawak ng paglinang sa domeyn ng pagkatuto at ng mga mag-aaral sa asignaturang Filipino. Gamit ang *Spearman-Rank Order Correlation*, ipinapakita nito na ang lahat ng *p-value* ay mas mababa sa antas ng kahalagahan (0.05). Ang resulta ay nagpapahintulot sa pagtanggi/di pagtanggap sa *null hypothesis* na nangangahulugang may makabuluhang ugnayan sa pagitan ng lawak ng paglinang sa mga domeyn ng pagkatuto at ang kanilang akademik performans. Ipinapahiwatig nito na ang malawak na paglinang sa tatlong domeyn, ay tumaas din ang akademik performans ng mga mag-aaral.

Ang resulta ay maaaring ipinaliwanag na sa pamamagitan ng paglinang ng mga pagkatuto ng mga kasanayan natutulungan nitong umunlad ang performans ng mga mag-aaral sa kanilang asignatura sa Filipino. Ayon sa isang pag-aaral nina Nedic at Macuka (2021), ang pag-unlad sa mga kognitibong kakayahan ay mahalaga para sa tagumpay sa pag-aaral. Ang paglinang sa kognitib domeyn ay maaaring magresulta sa mas mabilis na pag-unlad ng mga kasanayan sa pagkatuto at pag-aaral at mas mabuting pag-unawa sa mga konsepto. Dagdag pa, ang pag-aaral nina Wibowo, et al. (2020), ay nagpakita rin ng kahalagahan ng mga aspekto ng apektib domeyn sa pagganap ng mag-aaral. Ang mga mag-aaral na may mataas na antas ng pag-unlad sa aspektong ito ay mas malamang na magpakita ng mas mataas na motibasyon at kagustuhan na matuto at mapaunlad ang akademikong aspekto. Sa kabilang banda, ang pag-unlad sa saykomotor domeyn na kung saan ay may kinalaman sa pisikal na pagganap tulad ng pagsulat at

pagsasalita, ay maaaring magdulot ng mas mahusay na epekto sa mga gawain at pagsasanay sa klase at kabuoan ng kanilang akademikong pagganap.

Sa kabuoan, ang resulta ay nagpapahiwatig ng kahalagahan ng malawakang pag-unlad sa mga domeyn ng pagkatuto, hindi lamang sa kognitibong aspekto, pati na rin sa apektib at saykomotor na domeyn, sa pagtamo ng mataas na antas ng akademikong tagumpay. Ang pagtutok sa pagsulong ng mga kasanayan sa iba't ibang aspekto ng pag-aaral ay maaaring magresulta sa mas malalim na pag-unawa at mas mataas na pagganap ng mga mag-aaral.

Kongklusyon

Napatunayan na ang paggamit ng MELCs sa pagtuturo ng asignaturang Filipino ay nagdulot ng malawak na pagtanggap mula sa mga mag-aaral, hindi lamang sa aspektong kognitib ng kanilang pagkatuto kundi pati na rin sa aspektong apektib at saykomotor. May matibay na kaugnayan din sa pagitan ng lawak ng paglinang ng mga domeyn ng pagkatuto at ang akademik performans ng mga mag-aaral sa Filipino, kung saan ang kognitib, apektib, at saykomotor na domeyn ay may positibong relasyon sa kanilang pagganap sa asignaturang Filipino.

Rekomendasyon

Mula sa mga napatunayan buong-pusong inirekomenda ng mananaliksik ang sumusunod para sa Punong Guro, guro, at susunod na mananaliksik ang sumusunod:

Punong Guro

1. Maglaan ng panahon at pagkakataon para sa pag-*unpack* ng kurrikulum upang masigurong ang bawat guro ay may malalim na pag-unawa sa mga layunin, nilalaman, at pamamaraan ng pagtuturo na nakasaad sa MELCs.

Mga Guro

2. Mag-*participate* sa mga *training sessions* na nakatuon sa pag-*unpack* ng kurikulum.

Susunod na Mananaliksik

3. Magsagawa ng mga pananaliksik na magbibigay-diin sa pag-aaral ng epekto ng *prototype instructional plan* na nakatuon sa HOTS at tatlong domeyn ng pagkatuto sa pagpapalakas ng akademikong performans ng mga estudyante sa asignaturang Filipino.

Etikal na konsiderasyon

Ipinakita ng mananaliksik ang mga kailangang etikal na konsiderasyon sa pagsagawa ng pag-aaral. Tiniyak ng mananaliksik na manatiling konfidensyal ang mga

naging kasagutan ng mga respondente dahil may mga estudyante siyang ginamit. Ang dignidad at pribadong punto sa mga kasagutan nila ay kaniyang isinaalang-alang.

Ang mananaliksik ay sumunod din sa mga protokol ayon sa mga etikang isinalaysay ng *Ethics Committee* ng Unibersidad ng Foundation. Isang malawakang konsultasyon ang isinagawa sa pagpili sa paksa para sa pananaliksik at ang pagpili nito ay batay sa mga rasong kailangang napapanahon at sumusunod sa usaping pang-etika gayundin ang pagiging positibo palagi. Ang isang *informed consent* ay isinagawa ng mananaliksik para sa mga indibiduwal na kalahok sa pag-aaral upang makuha ang mga mahahalagang datos na kabilang sa pag-aaral na ito.

Pasasalamat

Taos-pusong ipinaaabot ng mananaliksik ang pasasalamat sa Poong Maykapal sa talino at kalusugan na ibinigay upang maisagawa nang kalugod-lugod at matagumpay ang pananaliksik na ito.

Ang tagumpay ng pananaliksik na ito ay dahil na rin sa tulong ng mga sumusunod:

Dr. Cristina P. Calisang, tagapayo ng mananaliksik, dahil sa kaniyang walang sawang pag-unawa at pagtulong sa pamamagitan ng pagtama sa mga kamalian habang isinagawa ang pananaliksik. Ang mananaliksik ay sadyang mapalad na nagkaroon ng tagapayong tulad niya.

Dr. Maria Chona Z. Futalan, estatistisyan, dahil sa kaniyang mahalagang mga suhestiyon lalo na sa pagpaalala sa mga simulain upang maisakatuparan sa itinakdang panahon ang pananaliksik. Ang mananaliksik ay kumikilala ng utang na loob sa kaniya.

Sa mga panelista: Dr. Erlinda N. Calumpang, Dr. Romario Ybañez , Dr. Felipe B. Sullera Jr., na nagbahagi ng kani-kanilang angking kakayahan at 1717agand sa pamamagitan ng mga suhestiyon at komento upang mas maging 1717agand ang pananaliksik.

Dr. Delma P. Manila, *School President* ng Metro Dumaguete College; Dr. Eva C. Melon, *Vice President for Academic Affairs* ng Metro Dumaguete College; at, ni G. Renze O. Lagrada, Punong-guro ng Metro Dumaguete College, *Senior High School Department*. Ang mananaliksik ay taos-pusong nagpapasalamat sa kanilang pahintulot na ibinigay upang maisagawa ang pananaliksik na ito.

G. Shem Don C. Fabila, ang *external expert* at tagapagsuri ng mananaliksik, G. Kendrick M. Kitane, Bb. Ritchel Elnar, para sa pagsuri sa baliditi ng talatanungan. Malaki ang utang na loob na tinatanaw ng mananaliksik sa kanilang mga mahahalagang puna.

Bb. Shaina Xel C. Piñero, guro sa asignaturang Filipino, sa pagbigay ng mga datos (iskor) ng mga estudyante na naisarbey hinggil sa kani-kanilang performans sa unang pagtataya sa Unang Markahan. Pasasalamat ang ipinapaabot ng mananaliksik.

Bb. Gay Buhat. Salamat sa kaniyang tulong mula sa simula hanggang sa mapagtagumpayan ng mananaliksik ang kaniyang kursong tinahak. Nawa ay marami pa siyang matulungan bilang kalihim sa Paaralang Graduwado sa Unibersidad ng Foundation.

Bb. Mhara Seloh L. Ramirez, kasintahan ng mananaliksik, Micaiah Jasiel R. Repollo, anak ng mananaliksik, sa kanilang walang sawang pagsuporta at pag-unawa sa mga panahong inilaan sa pagsagawa ng pananaliksik.

Lahat ng mga kapatid ng mananaliksik na nagtiwala sa kaniyang kakayahan at sa kanilang patuloy na pagtangkilik at pagsuporta sa lahat ng kaniyang mga paglalakbay sa buhay.

Iniaalay ng mananaliksik ang kaniyang pagsisikap sa kaniyang mga magulang Gng. Jenalyn B. Repollo at G. Danilo H. Repollo, at hindi niya malilimutan ang mga salitang ito ng kaniyang ama: *“Kahit hindi man ako nakapagtapos ng pag-aaral, ang pangarap ko ay inyong ipagpatuloy at makamit. Ang aking mga pagsisikap ay para sa inyong magandang kinabukasan.”*

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MAPPING COVID-19 VACCINATION UPTAKE IN REGION XII

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ABSTRACT

The COVID-19 pandemic is one of the biggest problems that the world has faced in recent years, and it highlights our vulnerability to infections. The implementation of vaccines was one solution to combat this pandemic; however, a variety of different vaccine brands led to vaccine hesitancy and the inability to achieve herd immunity, limiting the impact of vaccination. This study evaluates and assesses the implications of the current administration of vaccine dose in Region XII, focusing on the total vaccine dose obtained from the Department of Health - Resbakuna. This study used Tableau and GeoGebra to derive the study's main results. The results show that 56.84% of the population of Region XII is fully vaccinated, which implies vaccine hesitancy. The results also reveal that Pfizer is the most administered vaccine in Region XII. Additionally, differences in vaccine doses among areas suggest unequal distribution, possibly due to vaccine availability, population density, and hesitancy toward certain brands. Hence, limited access to certain vaccine brands in different areas results in some areas having more people vaccinated with specific brands. Moreover, it is recommended that the government use the vaccine administration data to create specific policies, improve transparency for residents, and help medical professionals enhance vaccination strategies.

Keywords: *COVID-19, Vaccinations, Hesitancy, Vaccine brands*

INTRODUCTION

The SARS-CoV-2 virus brought about the harmful COVID-19 pandemic, leading the World Health Organization to classify it as a global pandemic (Buheji et al., 2020). The Philippine government employed non-pharmaceutical interventions in hopes of fighting against the pandemic. The significant increase in reported active cases resulted in the government imposing measures to ease and prevent the further spread of the COVID-19 pandemic. These interventions include lockdowns, curfews, and limitations in social gatherings (Jiang et al., 2022).

One measure imposed by the government to prevent further spread of the disease is vaccination. Vaccination is one of the most effective ways to reduce the severity of infectious diseases. A study by Cababan et al. (2021) stated that the community should become more responsive and take positive action on the COVID-19 vaccination action plan. The study by Paltiel et al. (2021) also stated that health officials must invest more financial support in vaccine production and distribution to combat the COVID-19 pandemic effectively, and public health authorities must grasp which demographic is more inclined toward vaccine admissions or hesitancy.

According to Statista (2023), over 13 billion COVID-19 vaccine doses have been administered worldwide, and the Philippines has already issued a total of 166,058,133 doses in January 2023 (COVID-19 Tracker | Department of Health, 2023). The country has approved and administered a total of 7 different vaccine brands, namely Pfizer, Moderna, AstraZeneca, Janssen, Sinopharm, Sputnik V, and Sinovac, most of which have been used throughout the other regions of the Philippines (Cababan et al., 2021). Visualizations were created to determine provincial and municipal patterns within Region XII using available secondary data on vaccine administration.

Misinformation on vaccine administration may lead to vaccine hesitancy, which inhibits effective vaccine implementation within the region. According to a study conducted by Wang et al. (2022), a variety of factors may influence vaccination uptake, possibly affected by vaccination acceptance where individuals have different conspiracy beliefs, vaccine confidence, and other psychological factors. A comprehensive understanding of these factors and their impact on vaccination uptake paves the way for future researchers to study prospects that may affect the administration trend. For this reason, this study examined the COVID-19 vaccination data through a region-wide mapping assessment of Region XII. The study determined the association between vaccine brands and geographic areas through the test of independence.

Research Questions

This research assesses and evaluates the administration of vaccine dose in Region XII, the brand of vaccine, and the total number of vaccination dose per area in Region XII.

Specifically, it aims to determine the vaccination dosage per brand of vaccine by area. This study includes the percentage of fully vaccinated individuals, assesses the

association between the brand of vaccine dosage and area, and evaluates the impact of the COVID-19 vaccines on current COVID-19 cases.

1. What is the current vaccination situation in Region XII?
2. How do demographics such as geographic area associate with different vaccine brands?

METHODOLOGY

The study used secondary data from the official website of the Department of Health - Resbakuna, specifically from the SOCCSKSARGEN Region chapter (Region Vaccination Dashboard, 2023). It includes the total number of vaccinations for each vaccine brand from each province in Region XII: South Cotabato, North Cotabato, Sultan Kudarat, and Sarangani. Additionally, each province's spatial data, population, and respective municipalities were collected for data visualization.

Data visualization graphically portrays data to make it more appealing and understandable to viewers. It effectively draws attention to the most valuable findings in a set of information and makes it less challenging to identify associations, trends, anomalies, and patterns (Stevens, 2021). Tableau Public Software generated heatmaps and bubble plots to incorporate appropriate data visualization.

The chi-square test of independence analyzes the relationship between dichotomous independent variables and offers a quantitative basis for interpreting the findings (McHugh, 2013; Turney, 2022). Geogebra was used as the software for the association test. The variables of interest in this study pertained to the geographical area where the vaccine brands were administered. The probability setting was used to obtain the chi-square statistic of the data analysis.

RESULTS

Provinces	Population	Fully Vaccinated	%Vaccinated
North Cotabato	1 490 618	840 323	56.37%
Sarangani	558 946	298 839	53.46%
South Cotabato	1 672 791	1 005 116	60.09%
Sultan Kudarat	854 052	456 979	53.51%
Total	4 576 407	2 601 257	56.84%

Table 1. *Distribution of Fully Vaccinated by Provinces, January 2023*

Variables	X^2	p-value	Remarks
Area vs. vaccines	108 196.38	0.00	Highly Associated

Table 2. *Association of Area and Vaccines*

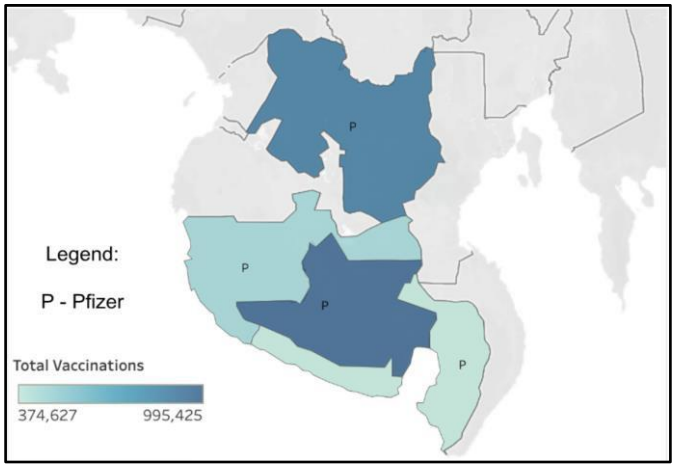


Figure 1. *Distribution of Vaccine Administrations in Region XII, by Province, 2023*

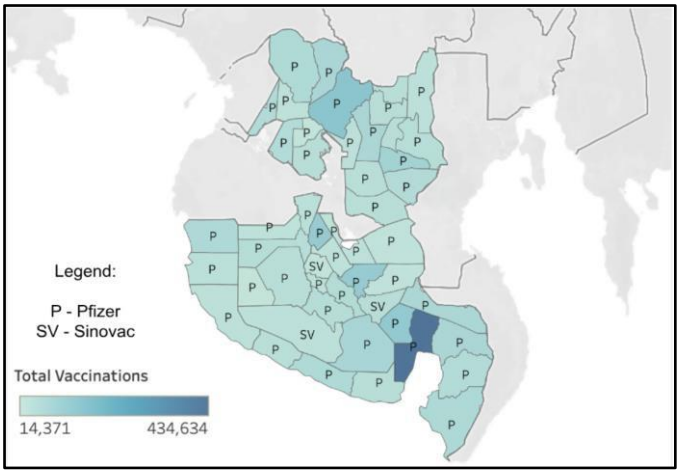


Figure 2. *Distribution of Vaccine Administrations in Region XII, by Municipality, 2023*

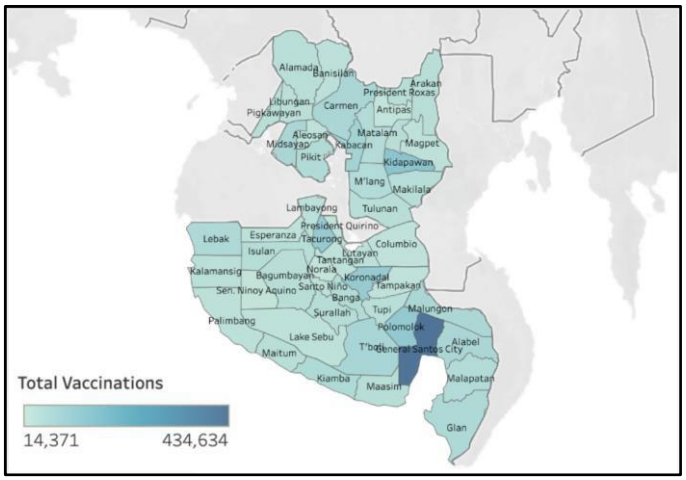


Figure 3. *Distribution of Pfizer Vaccinations in Region XII, by Municipality, 2023*

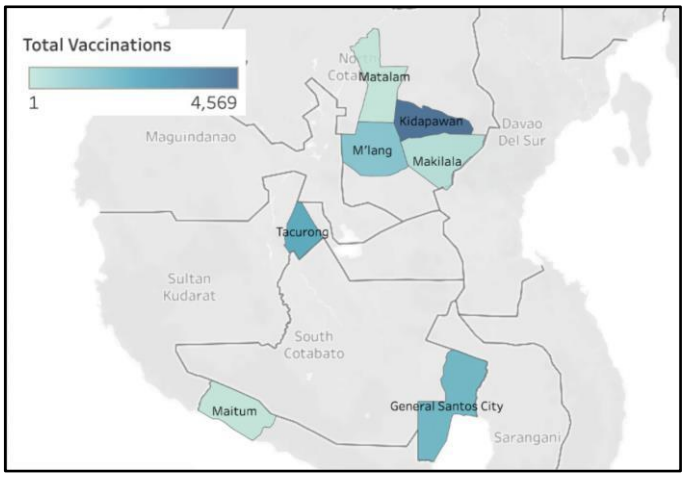


Figure 4. *Distribution of Sputnik V Vaccinations in Region XII, by Municipality, 2023*

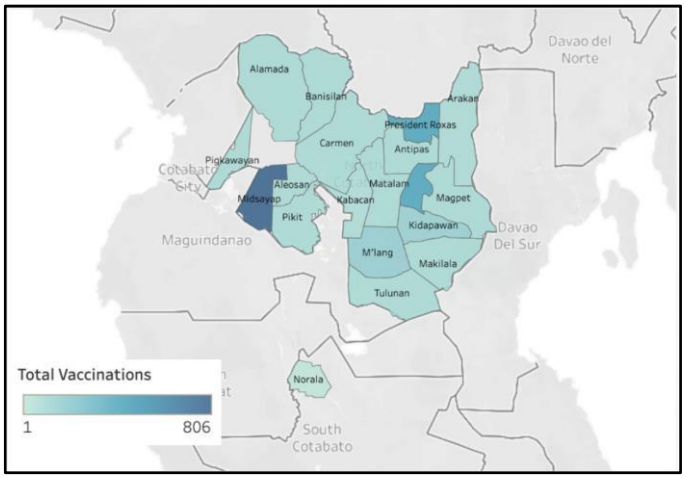


Figure 5. *Distribution of Sinopharm Vaccinations in Region XII, by Municipality, 2023*

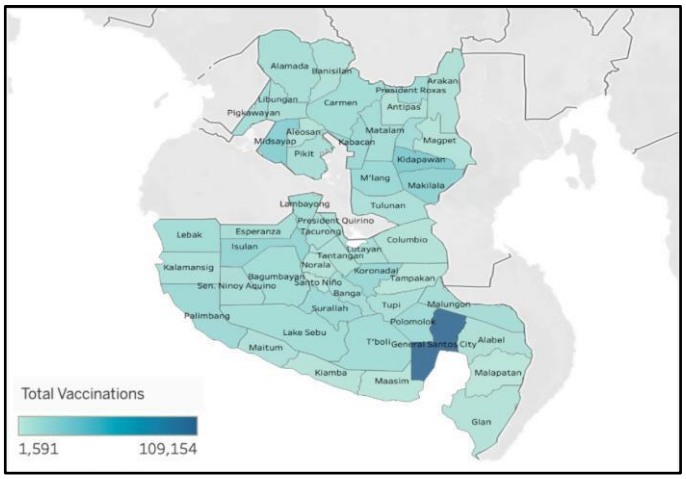


Figure 6. *Distribution of AstraZeneca Vaccinations in Region XII, by Municipality, 2023*

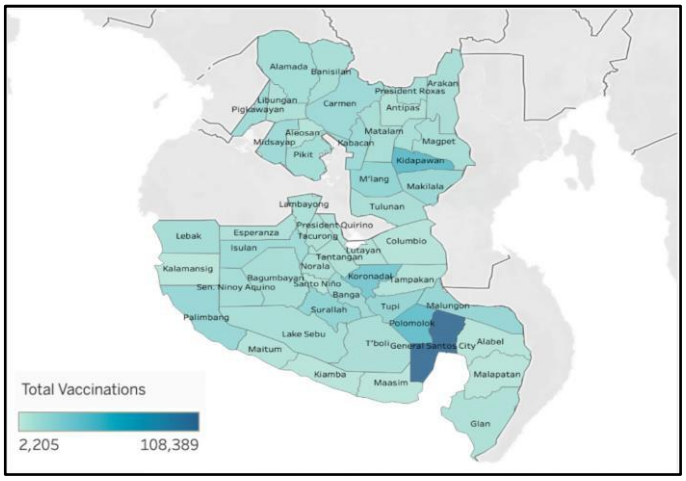


Figure 7. *Distribution of Moderna Vaccinations in Region XII, by Municipality, 2023*

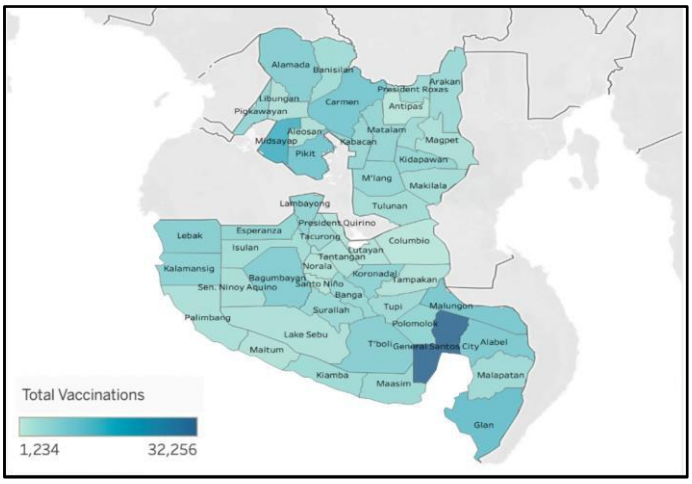


Figure 8. *Distribution of Janssen Vaccinations in Region XII, by Municipality, 2023*

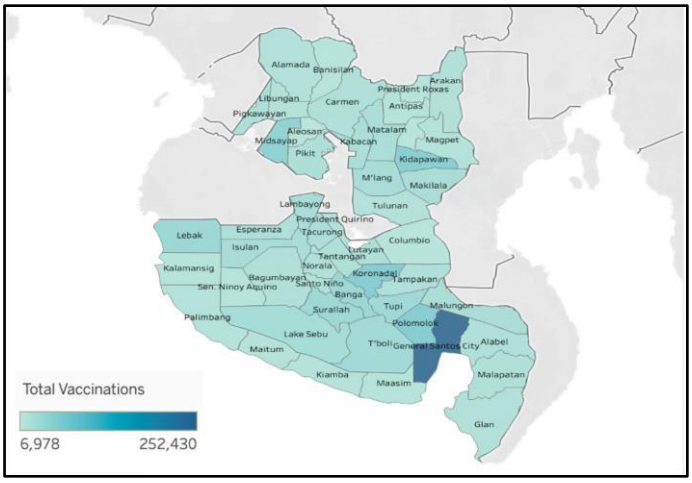


Figure 9. *Distribution of Sinovac Vaccinations in Region XII, by Municipality, 2023*

DISCUSSION

The results reveal significant variations in the number of administered vaccine brands associated with their geographic area in Region XII. These differences may have resulted from many factors affecting vaccine administration, causing specific locations to have more, fewer, or no administration for particular vaccine brands. The findings reveal a specific trend regarding the municipalities with the highest vaccine administrations; however, the same trend does not exist for the lowest number of administrations in a particular municipality.

According to the Philippine Statistics Authority (2020), South Cotabato is the most populous province, followed by North Cotabato, Sultan Kudarat, and Sarangani, with General Santos City being the most populated city in Region XII and Antipas being the least populated. This information may suggest the possible factor that highly populated areas, such as General Santos City, have high vaccination rates, while in contrast, less populated locations like Antipas and other municipalities have few or no vaccinations for certain vaccine brands. General Santos City was one of the focused locations for the initial rollout of the COVID-19 vaccinations because of the country's high two-week growth rate of infection (Tomacruz, 2020), implying that it may provide evidence of vaccination prioritization since South Cotabato had higher vaccinations than other provinces, while Sarangani had the least.

Additionally, vaccines such as AstraZeneca, Moderna, and Sinovac had South Cotabato and General Santos City as their most vaccinated area; however, Janssen had North Cotabato with General Santos City as their most vaccinated area. The results also show that specific municipalities had little to no vaccination for specific vaccine brands. Sinopharm vaccinations were only present in North Cotabato. At the same time, Sputnik V had vaccinations present only in the following municipalities: Tacurong, M'lang, Kidapawan, General Santos City, Maitum, Makilala, and Matalam, which may indicate

that some vaccines are not available at the location's vaccination sites.

Vaccine hesitancy, influenced by individual beliefs and social factors, may have contributed to low uptake rates in specific locations (Amit et al., 2022). When individuals are reluctant to receive a specific vaccine brand or all vaccines, this hesitancy may reduce the overall vaccination rate; therefore, addressing these concerns through strategic communication is crucial for promoting vaccination (Atinga et al., 2022; Lin et al., 2020). Studies have also shown how vaccine hesitancy is still evident within countries (The Organization for Economic Co-operation and Development, 2021). It is also evident that vaccine hesitancy, especially in the Philippines, is significantly higher as compared to other countries, where Filipino participants exhibited a much higher level of COVID-19 vaccine hesitancy compared to Malaysian participants (Brackstone et al., 2022; Cho et al., 2021).

Documentation in tracking dual-dose vaccine administrations and supporting culturally sensitive and evidence-based communication may increase vaccine acceptance (Paltiel et al., 2021). It is also recommended that vaccine confidence be improved through rigorous research to understand the psychological, social, and political factors affecting public trust in vaccines within the region (Larson et al., 2011). Thus, providing more vaccine administration information may help improve vaccine confidence by increasing regional transparency. Furthermore, determining which demographics to consider when purchasing vaccines may help policymakers propose specific policies, maximizing the practical implementation of COVID-19 vaccines.

Conclusions

The study reveals that in January 2023, Region XII did not achieve the threshold values for herd immunity, with 56.84% showing vaccine hesitancy. Pfizer was the most commonly administered vaccine in Region XII compared to other vaccines, as indicated by the results of the presented heat maps of the administration of the vaccines. Pfizer is more commonly administered than other vaccine brands in the region. The province with the highest Pfizer vaccinations is South Cotabato, with General Santos City in terms of municipality.

The chi-square test also revealed a direct association between the brand of vaccines concerning the area of vaccine recipients, indicating that vaccine administration across different areas may not have been distributed equally, influenced by factors such as population density, vaccine brand hesitancy, and vaccine availability in each area. This information suggests that various considerations should be taken when purchasing different vaccine brands to guarantee that COVID-19 vaccinations are implemented effectively. Determining the factors that affect specific areas can benefit the Philippines' economy in successfully allocating vaccines.

Recommendations

The study recommends that other studies consider different regions of the Philippines in determining the vaccine distribution further to discuss the administration dynamics of the COVID-19 vaccines. Observing critical prospects in vaccine administration may provide additional insights into understanding administration dynamics and maximize the implementation of the COVID-19 vaccine administration and, possibly, in future epidemics. Potential policies centered on specific issues faced by the government in administration can be supported and included in other studies. It is also recommended that the government use the vaccine administration data to improve transparency for residents and help medical professionals enhance vaccination strategies.

Recommendations for using software for further studies allow for more accessible analysis and interpretation of data. GeoGebra proved to be an effective method for conducting the chi-square test of independence for the different values of area and type of vaccines. Lastly, Tableau Software offered a quicker and easier way to generate the heat maps included in this study - it is also the most recommended analytics platform for analyzing vast volumes of data. Additionally, it is advisable to use other software applications for specific tasks, as there are limitations to free software options.

Compliance with Ethical Standards

Strict adherence to ethical guidelines was followed during the study. Data regarding the number of vaccinations for each vaccine brand for every area was collected from the Department of Health - Resbakuna, the COVID-19 cases data came from the DOH website, and the regional population was collected from the PSA. Although human participation was not directly involved, measures were taken to ensure data privacy. Proper permissions were secured for data access, and transparency was maintained regarding sources and limitations.

The research was conducted with integrity, avoiding conflicts of interest and ensuring objective analysis. Adherence to institutional and regulatory guidelines was upheld, and ethical considerations were integrated into data analysis. The broader implications for public health and policy were carefully considered. These efforts ensure that the research contributes valuable insights while upholding ethical standards.

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MEASURING THE IMPACT OF FACE-TO-FACE LEARNING ON HUMSS STUDENTS' SCHOOL PRODUCTIVITY

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ABSTRACT

This research explores the impact of face-to-face learning on the productivity of Grade 12 Humanities and Social Sciences Strand students, concentrating on multifaceted aspects such as academic performance, completion of performance tasks, overall academic outcomes, student engagement, extra-curricular activities, and school attendance rates. Through a quantitative methodology employing random sampling (n=54) via an online survey, the study systematically investigates the productivity of Grade 12 Humanities and Social Sciences students. The researchers harnessed descriptive statistics for data analysis, unveiling a robust consensus among the participants. The respondents overwhelmingly expressed a positive outlook on the impact of face-to-face learning, with weighted means ranging from 3.43 to 3.49 and an overarching weighted mean of 3.45, indicative of a unanimous 'strongly agree' sentiment. These findings underscore the affirmative influence of physical classroom presence on various dimensions of student experience. The study asserts that the tangible presence in a classroom setting significantly contributes to the academic success, heightened engagement, and overall productivity of Grade 12 Humanities and Social Sciences Strand students. The research advocates for the sustained relevance of face-to-face learning, emphasizing its enduring importance within the educational landscape, thereby supporting the holistic development of students in this academic context.

Keywords: *face-to-face learning, student productivity, academic performance, school attendance rates, senior high school*

INTRODUCTION

For generations, traditional education has utilized face-to-face classes, a method in which teachers and students convene in a shared physical environment to learn together. This approach gained renewed attention during the pandemic when the global educational landscape was disrupted. Opinions about face-to-face classes vary widely, with some staunch advocates and others voicing concerns, fueling a spirited debate on the subject. In the past few years, the rise of technological innovations has resulted in an increasing dependence on digital platforms for educational use. This trend has reached its peak with the widespread acceptance of online or remote learning, driven by its convenience and accessibility. In light of this transition, it is essential to evaluate the lasting significance of face-to-face learning and its capacity to augment students' effectiveness in the educational environment.

As McQuaid (2022) indicated, a significant 97.5% of public schools have reinstated traditional five-day, in-person classes, leading to a noticeable improvement in educational approaches. Based on this information, it is evident that face-to-face learning remains the most trusted teaching method. Face-to-face education has a profound impact on the intricate dynamic between students and teachers. In-person learning offers students the chance to establish a more intimate and emotionally connected relationship with their teachers, a crucial aspect emphasized by Moè et al. (2022). In traditional classrooms, students have the opportunity to build stronger emotional ties with their teachers, a fundamental element. This connection forms the basis for trust and increased engagement, positively influencing both student behavior and academic performance. Furthermore, the research by Vago and Carvalhais (2022) emphasized the broader impact, suggesting that a positive student-teacher relationship creates an environment conducive to both academic and social development. In summary, these findings collectively emphasize the irreplaceable role of face-to-face learning in fostering the essential components of trust, engagement, and positive environments within the educational realm.

In-person instruction, commonly associated with traditional classrooms, provides a dynamic learning setting marked by direct interactions between teachers and students. This setting encourages lively discussions, practical activities, and immediate feedback, all recognized in prior research as essential components of effective learning. Active engagement between teachers and students significantly encourages student involvement, a critical aspect of classroom participation. Furthermore, the same study suggests that this interaction plays a vital role in cultivating a sense of accomplishment and self-efficacy among students, thereby enhancing their motivation to learn. Additionally, according to Zhan et al. (2021), these interactions have the potential to bolster student leadership skills, ultimately contributing to an enriched learning atmosphere.

In Stoian et al.'s study (2022), it is acknowledged that online education holds the potential to provide flexibility, accessibility, and cost-effectiveness. Nevertheless, face-to-

face education is highlighted for its capacity to offer social interaction, hands-on experience, and networking opportunities (p. 12812). Kemp and Grieve's research (2014) suggest that both online and face-to-face activities can result in similar academic performance levels, yet students express a preference for face-to-face activities. These findings may guide future researchers in delving deeper into the specific elements of face-to-face education that contribute to students' overall productivity. Such exploration could involve an examination of how social interaction and hands-on experiences impact the learning environment and influence student outcomes. In the ever-evolving educational landscape, the efficacy and relevance of traditional in-person instruction are being reexamined due to continual technological advancements. In this research endeavor, the researcher’s objective is to thoroughly examine the impact of face-to-face learning on students' overall academic performance, engagement, and participation in extracurricular activities, as well as their school attendance rates.

Unveiling the Impact: Exploring Factors That Influence Academic Performance

One key theme in this study is the impact of face-to-face learning on students' academic performance. Researchers aim to understand how traditional classroom settings affect students' grades and their ability to complete performance tasks. Brew (2021) emphasized that educational success is gauged through students' academic accomplishments, reflecting their achievement levels and capacity for independent learning. It signifies their readiness to take responsibility for their educational journey, pursue dynamic career paths, and acquire knowledge and skills essential for a prosperous life. A range of factors, including environmental, social, economic, psychological, and educational elements, influence students' academic performance. While these factors exert a significant impact on academic outcomes, their manifestation varies across countries and among individuals. Previous studies predominantly focused on aspects such as gender, classroom environment, teacher training, instructional variations, family educational background, and socioeconomic contexts when investigating students' academic achievements.

In consideration to Högberg's (2023) research, the prevailing view is that achieving higher academic performance is generally advantageous, with the majority of quantitative studies indicating a weak positive correlation between performance and mental health. This research offers valuable insights into student performance outcomes, shedding light on the impact of face-to-face learning on academic achievements. Investigating the various elements that contribute to academic performance can establish a fundamental comprehension of the complex factors influencing students' achievements. When these insights are applied to the specific context of in-person learning, researchers can analyze how traditional classroom environments affect aspects like socio-economic status, study habits, and parental involvement. This enables a comprehensive understanding of the impact of face-to-face learning on students' school productivity. The findings from this study can serve as a roadmap for improving educational methods, shaping policies, and questioning or validating assumptions. In essence, this research contributes to a more nuanced comprehension of the correlation between face-to-face learning and academic success.

Student Engagement and Active Participation: Exploring Influences on Educational Success

Researchers are investigating whether in-person learning is associated with higher participation in school-related pursuits. According to Burton et al. (2018), engaging in various extracurricular activities can positively impact students' educational interest and learning outcomes. This implies that the physical presence of students in school for face-to-face learning may increase the likelihood of their involvement in extracurricular activities, thereby enhancing their overall educational experience. In a recent investigation, Hopkins et al. (2021) delved into the realm of out-of-classroom engagement encounters specifically tailored for first-generation college students. This exploration encompassed involvement in work, residence, athletics, clubs, organizations, and volunteer work. The primary objective of their research was to discern the effects of these engagement experiences on the persistence of students. The findings of this study highlight the crucial role that participation in diverse extracurricular activities plays in shaping the educational trajectories of students.

Based on these discoveries, one can reasonably propose that in-person education might result in higher levels of student involvement and active participation in school-related endeavors, including extracurricular activities. The immersive experiences and interpersonal interactions within traditional educational settings have the potential to inspire students to engage more actively in their academic community. Examining student engagement and active participation is essential for understanding the influence of in-person learning on students' academic performance. Evaluating the extent of engagement and participation allows researchers to measure the success of conventional classroom setups in nurturing an optimal learning atmosphere. Elevated levels of student engagement are frequently linked to heightened motivation, curiosity, and focus, all of which play a role in improving overall productivity. Ultimately, the establishment of a supportive, motivating, and efficient learning environment that fosters student success necessitates a thorough comprehension of the elements influencing student engagement and active involvement.

Analyzing School Attendance Rates and Their Impact on Academic Learning

The study examines how face-to-face learning impacts students' school attendance rates. This theme addresses whether being physically present in school encourages better attendance. In the study conducted by Sekiwu et al. (2020), it was noted that, although the variable of school attendance had minimal impact on academic performance, it did establish a significant positive correlation between attending school and achieving academic success. On a related note, Chisadza et al. (2021) underscore the significance of improving digital infrastructure and making internet access more affordable, especially in light of the challenges posed by the Covid-19 pandemic. According to their findings, these measures play a crucial role in mitigating the adverse effects on educational outcomes, underscoring the importance of promoting physical attendance at school, which is closely associated with increased attendance.

Furthermore, a positive correlation between students' participation in in-person classes and their involvement in virtual learning within a blended educational setting. Their findings suggest that students stand to gain advantages from a blend of conventional classroom participation and the inclusion of virtual learning elements. This suggests that being present in a physical classroom setting supports increased attendance rates, particularly when complemented by virtual learning options. Examining school attendance rates is essential for understanding how in-person learning impacts students' academic performance. Through data collection, educators and researchers can discover correlations between regular classroom attendance and students' success. A high attendance rate may indicate an active and engaged student body, suggesting a positive link between face-to-face learning and academic productivity. On the other hand, lower attendance rates may signify challenges or disinterest, prompting a closer evaluation of the effectiveness of in-person instruction. Uncovering the relationship between attendance and productivity offers valuable insights for improving educational approaches, underscoring the significance of face-to-face interactions in creating an optimal learning environment, and implementing interventions to boost overall academic achievement.

Research Questions

This study aims to measure the impact of face-to-face learning on students' productivity in school. The study specifically aims to give answers to the following questions:

1. What is the effect of face-to-face learning in students' grades?
2. What impact does face-to-face learning have on students' ability to complete performance tasks?
3. How does physical presence in a classroom setting influence overall academic outcomes?
4. What is the level of student engagement and participation in extracurricular activities in face-to-face learning?
5. What is the effect of face-to-face learning in students' school attendance rates?

METHODOLOGY

The research design that is employed in this study is a quantitative approach. According to Creswell (2014), Quantitative research involves the systematic collection and analysis of numerical data to describe characteristics, identify correlations, and test hypotheses. Employing random sampling is a strategic decision aimed at minimizing potential biases in the study outcomes. In ensuring a judicious representation of this population, the research opted for a systematic approach to respondent selection. The utilization of Taro Yamane's formula served as a methodological guide in determining the appropriate sample size. The participants were assembled using the Taro Yamane's

formula, which involves calculating the number of respondents using the equation 54 = 121/ (1 + 121 (0.10) 2).

In assessing the impact of face-to-face learning on students' school productivity, the researchers employed a research instrument in the form of a questionnaire consisting of 55 survey questions. The said instrument is divided into two parts which includes the demographic profile of the respondents and the specific questions to assess the study's objectives. A computer-generated software or specifically known as Google forms is used to disseminate and allocate the study's instrument. Upon completion of the data gathering process, the collected information is subjected to careful analysis, with a particular focus on testing the formulated hypotheses. The analysis contributes to uncovering insights into the potential positive effects of face-to-face learning on students' academic performance, engagement, and overall productivity. Throughout the entire process, confidentiality and privacy were prioritized, with informed consent obtained from participants at the outset, underscoring the commitment to safeguarding the sensitive information provided by the respondents. This commitment to confidentiality extends to the subsequent stages of analysis and reporting, reinforcing the ethical considerations in handling the gathered data. In analyzing the data, the researchers employed descriptive statistics to carefully summarize and analyze key aspects of our dataset. Descriptive statistics serve as concise informational coefficients that encapsulate a given dataset, serving as a representation of either an entire population or a sample. These statistics are categorized into measures of central tendency and measures of variability (spread).

RESULTS AND DISCUSSION

Demographic Profile of the Respondents

Age

Table 1 illustrates the demographic distribution based on age, outlining the frequency and percentage of respondents in each category. The data reveals that the majority of respondents, comprising 33 individuals (61.11%), fall within the 17 years old category, followed by 18 years old with 17 individuals (31.48%). The 16 years old group constitutes 2 individuals (3.70%), while both 19 years old and 23 years old groups each account for 1 individual (1.85%). This distribution provides an overview of the age composition of the surveyed individuals.

Sex

Also, Table 1 presents the distribution of respondents based on sex, detailing the frequency and percentage in each category. The data indicates an almost balanced representation of sex among the respondents, with the majority of females constituting 28 individuals (51.85%) and males comprising 26 individuals (48.15%) of the surveyed respondents. This breakdown provides insight into the sex composition of the study respondents.

Table 1

Descriptive Statistics of Respondent's Demographic Profile

Demographic Profile		*Frequency*	*%*
Age			
	16	2	3.70
	17	33	61.11
	18	17	31.48
	19	1	1.85
	23	1	1.85
Sex			
	Male	26	48.15
	Female	28	51.85

Effect on Students' Grades

In Table 2, the subscale focusing on the "Impact of Face-to-Face Learning on Students' Grades" reveals a weighted mean of 3.49 and a standard deviation of 0.58. The majority of respondents strongly agreed with this statement, as illustrated in the table. Previous studies have consistently highlighted lower academic performance in online courses when compared to traditional face-to-face classes. Despite these concerns, there remains uncertainty about online course performance, particularly given the notable attrition rates among enrolled students. Addressing such concerns, some research indicates that the incorporation of peer review assessments can boost final grades and positively influence students' overall perception of learning, as evidenced in study conducted by Mulder (2014).

Impact on Students' Proficiency in Completing Performance Tasks

Table 2 demonstrates a unanimous consensus that traditional face-to-face learning significantly contributes to students' proficiency in completing performance tasks, as evidenced by a weighted mean of 3.46, affirming strong agreement with a standard deviation of 0.54. Concurrently, a recent review by Nortvig et al. (2018) identified key factors influencing students' academic performance in both distance learning and blended learning environments. These factors encompassed the instructor's presence, interactive elements, content quality, and the integration of online and offline activities, including practice-oriented tasks. The three comprehensive review studies previously mentioned highlight the extensive body of literature comparing academic performance between face-to-face and distance learning. Additionally, various studies have delved into the impact of individual factors such as motivation, learning strategies, and cognitive abilities on academic outcomes, as demonstrated by Stark (2019). Similarly, research by El-Refae et al. (2019) has explored the distinctions and similarities in demographic characteristics, satisfaction levels, competencies, learning outcomes, and academic performance between face-to-face and distance learning modalities.

Impact of Physical Presence on Academic Achievement

As displayed in table 2, there is a strong agreement regarding the positive impact of physical presence on academic achievement. A weighted mean of 3.46 supports the idea that students perceive face-to-face learning as beneficial for academic success with standard deviation of 0.50. Angara et al. (2020) highlighted the significant potential impacts of the swift transition to the "New Normal" educational paradigm on learners' overall development. One notable concern is the potential effects of this new educational model and instructional delivery methods on students' mental health and emotional well-being. The use of emotions to enhance thinking and academic achievement is limited, but the understanding and regulation of emotions are strongly linked to scholastic success, particularly in terms of emotional understanding, which exhibits a robust correlation. Teachers who prioritize students' emotional intelligence tend to foster a friendly and conducive learning environment. An inherent characteristic of online learning is the temporal and spatial separation between teachers and learners. The flexibility provided by online courses, allowing independence from fixed schedules and physical locations, is a prominent feature that contributes to learners' convenience and adaptability.

Level of Student Engagement and Participation in Extracurricular Activities

As shown in table 2, the data indicates strong agreement that face-to-face learning contributes positively to student engagement and participation in extracurricular activities. The weighted mean of 3.43 suggests a generally favorable perception. The significance of extracurricular activities in a student's life is universally acknowledged. Aoyagi et al. (2020) conducted a study exploring the motivating factors behind students' engagement in various extracurricular activities. They identified key factors such as a sense of responsibility, continuity, the spirit of challenge, and advancement. Furthermore, Seow and Pan (2016) proposed a development framework that suggests a positive correlation between extracurricular activities and academic performance up to a certain threshold. However, they caution that excessive participation beyond this point may have detrimental effects on achievement. Specifically, they argue that if the time invested in extracurricular activities becomes so substantial that it displaces academically focused activities, it can hinder overall academic success.

Effect on Students' School Attendance Rates

The results on table 2 suggest strong agreement that face-to-face learning has a positive effect on students' school attendance rates. The weighted mean of 3.44 supports the notion that physical classroom presence positively influences attendance. Carminucci et al. (2021) reported similar findings, noting that students attending school in person tend to exhibit higher attendance rates in comparison to those primarily engaged in online instruction. Additionally, students generally express a preference for face-to-face learning over online modalities, citing increased engagement and the immediate feedback received during class discussions (Kemp & Grieve, 2014).

Survey Questionnaires	*Mean*	*SD*	*Verbal Interpretation*
Effect of face-to-face learning in Students Grades			
1. Do you think Grading Motivates Students to Learn?	3.51	0.54	Strongly Agree
2. Face-To-Face Helps you to Raise your Grades?	3.55	0.60	Strongly Agree
3. Can face-To-Face Help You to Facilitate the Lessons Easily?	3.64	0.48	Strongly Agree
4. Do your Grades Provide Reliable Information about Students grades?	3.33	0.61	Strongly Agree
5. Does the grading provide feedback to help you understand and improve your definitions?	3.42	0.68	Strongly Agree
6. After going back to traditional Face-To-Face Learning did it positively affect your Grades?	3.53	0.57	Strongly Agree
7. Face-to-Face Learning helps you to be more productive at school?	3.59	0.53	Strongly Agree
8. Doing your task at school fast and easy?	3.29	0.79	Strongly Agree
9. Face-to-face discussion helps you to understand the lesson more?	3.66	0.51	Strongly Agree
10. Does in person learning help your overall academics?	3.46	0.57	Strongly Agree
Weighted mean	***3.49***	***0.58***	***Strongly Agree***
Impact of Face-to-Face Learning on Students' Proficiency in Completing Performance Tasks			
1. In-person interactions with teachers or instructors have on student ability to complete performance tasks?	3.40	0.49	Strongly Agree
2. In your experience, do Face-to-face learning environments provide more immediate and effective feedback on your performance task?	3.30	0.52	Strongly Agree
3. When working on group performance tasks in a face-to-face setting, do you feel more accountable to your group members?	3.38	0.67	Strongly Agree
4. Does the physical presence of teachers or instructors in face-to-face learning impact your motivation to complete a performance task?	3.51	0.49	Strongly Agree
5. In Face-to-face learning, do you feel more engaged and actively involved when working on performance tasks?	3.38	0.52	Strongly Agree
6. Do you feel more accountable to your group when working on group performance tasks in face-to-face learning?	3.35	0.49	Strongly Agree
7. Do you receive more immediate and effective feedback on your performance task face-to-face learning?	3.35	0.50	Strongly Agree
8. Does face-to-face interaction with teachers and instructors help you better understand performance task requirements?	3.57	0.53	Strongly Agree
9. Does face-to-face learning have a positive impact on your ability to complete performance tasks?	3.51	0.51	Strongly Agree
10. Has face-to-face learning made it easier for you to demonstrate your skills in performance tasks?	3.46	0.65	Strongly Agree
Weighted mean	***3.46***	***0.54***	***Strongly Agree***
Impact of physical presence on Academic Achievement.			
1. To what extent do you believe that physical presence in a classroom positively impacts your ability to understand and grasp academic context.	3.42	0.49	Strongly Agree
2. Do you think face-to-face interactions with instructors during classroom sessions contribute significantly to your academic performance?	3.46	0.53	Strongly Agree
3. Does being physically present in a classroom enhance your focus and concentration during lectures?	3.46	0.65	Strongly Agree
4. To what extent do you believe that the physical classroom setting positively influences your ability to actively participate in class discussions?	3.50	0.50	Strongly Agree
5. Do you think having classmates physically present around you enhance your collaborative learning experiences?	3.42	0.53	Strongly Agree
6. Does the physical presence of classmates and instructors create a more engaging learning environment?	3.35	0.64	Strongly Agree
7. Do you find that physically attending classes helps in building a sense of community and belonging within the academic environment?	3.51	0.49	Strongly Agree
8. To what extent do you believe that face-to-face communication with instructors fosters a clearer understanding of course materials compared to online alternatives?	3.42	0.53	Strongly Agree
9. In your experience, does being present in the classroom positively impact your motivation to complete assignments and actively participate in coursework?	3.61	0.59	Strongly Agree

10. Do you feel that physical attendance in the classroom setting is essential for creating a more immersive and enriching learning experience?	3.46	0.49	Strongly Agree
Weighted mean	***3.46***	***0.50***	***Strongly Agree***
Level of student engagement and participation in extracurricular activities face-to-face.			
1. In your experience, do you believe that face-to-face learning positively influences students' active participation in extracurricular activities?	3.48	0.50	Strongly Agree
2. To what extent do you think the physical presence in a classroom setting encourages students to engage in extracurricular activities on campus?	3.42	0.60	Strongly Agree
3. Do you find that students who attend face-to-face classes are more likely to participate in clubs, sports, or other non-academic activities compared to those in online learning environments?	3.44	0.60	Strongly Agree
4. Does the traditional classroom setting contribute to a higher level of overall student engagement, including involvement in extracurriculars?	3.44	0.53	Strongly Agree
5. To what extent do you believe that face-to-face interactions with peers and instructors positively influence students' motivation to participate in extracurricular events?	3.37	0.52	Strongly Agree
6. Do you think students who attend classes in person are more likely to take on leadership roles in extracurricular activities compared to those in virtual learning environments?	3.37	0.70	Strongly Agree
7. Does the physical presence in a classroom foster a sense of community that encourages students to actively engage in extracurricular opportunities?	3.42	0.56	Strongly Agree
8. To what extent do you believe that students attending face-to-face classes have more opportunities for networking and forming connections that lead to involvement in extracurriculars?	3.44	0.53	Strongly Agree
9. Do you find that the traditional classroom environment positively impacts students' willingness to explore and participate in a variety of extracurricular activities?	3.48	0.50	Strongly Agree
10. In your opinion, does the level of student engagement in extracurricular activities increase with the presence of face-to-face learning compared to virtual or online learning environments?	3.48	0.60	Strongly Agree
Weighted mean	***3.43***	***0.56***	***Strongly Agree***
Effect of face-to-face learning in students' school attendance rates.			
1. Do you believe that face-to-face learning improves students' school attendance rates?	3.51	0.60	Strongly Agree
2. Having a choice between face-to-face and online learning affect school attendance rates?	3.44	0.62	Strongly Agree
3. Do you think that students feel more accountable and responsible when they attend face-to-face classes which may lead to better attendance rates?	3.57	0.56	Strongly Agree
4. Do you agree that face-to-face learning provides students with more opportunities to interact with other students and their teachers, which can positively impact their attendance rates?	3.57	0.49	Strongly Agree
5. To what extent do you believe that face-to-face interactions with teachers positively influence students' motivation to attend school on a regular basis?	3.50	0.49	Strongly Agree
6. Do you think students who attend classes in person are less likely to miss school days compared to those in virtual or online learning environments?	3.24	0.81	Strongly Agree
7. In your view, does the physical presence in a classroom contribute to a sense of responsibility and commitment among students regarding their attendance?	3.50	0.60	Strongly Agree
8. To what extent do you believe that students attending face-to-face classes have fewer instances of absenteeism compared to those in virtual or online learning environments?	3.31	0.68	Strongly Agree
9. Do you find that the traditional classroom environment positively influences students' sense of routine and discipline, leading to better school attendance?	3.33	0.63	Strongly Agree
10. Does the level of face-to-face interaction in the classroom have a direct impact on reducing truancy and improving overall school attendance rates?	3.44	0.53	Strongly Agree
Weighted mean	***3.44***	***0.60***	***Strongly Agree***
Grand Weighted Mean	***3.45***	***0.55***	***Strongly Agree***

Conclusions

The following conclusions were derived from the pertinent results of this study.

1. The demographic profile of the respondents in this study encompasses their sex and age. The majority of respondents, comprising 33 individuals (61.11%), fall within the 17 years old category. The 18 years old group is represented by 17 individuals (31.48%). The 16 years old group constitutes 2 individuals (3.70%), while both the 19 years old and 23 years old groups each account for 1 individual (1.80%). There are 28 females (51.85%) and 26 males (48.15%) among the surveyed respondents.
2. The subscale "*Effect of face-to-face learning on Students Grades*" yielded a weighted mean of 3.49 with a standard deviation of 0.58, indicating a moderate to high level of agreement among the respondents. This suggests a positive perception among the surveyed individuals regarding the efficacy of face-to-face learning in influencing academic performance.
3. The subscale "*Impact of Face-to-Face Learning on Students' Proficiency in Completing Performance Tasks*" shows a strong agreement, with a weighted mean of 3.46 and a standard deviation of 0.54. This suggests a robust consensus among respondents that face-to-face learning positively influences students' performance task abilities.
4. The subscale "*Impact of Physical Presence on Academic Achievement*" demonstrates a strong agreement regarding the positive impact of physical presence on academic achievement, with a weighted mean of 3.46 and a standard deviation of 0.50. This indicates that students perceive face-to-face learning as beneficial for academic success, reinforcing a positive trend in their opinions.
5. The subscale *"Level of Student Engagement and Participation in Extracurricular Activities*" indicates strong agreement that face-to-face learning contributes positively to student engagement and participation in extracurricular activities. The weighted mean of 3.43 and a standard deviation of 0.56 suggests a generally favorable perception, highlighting the role of face-to-face learning in enhancing students' involvement beyond regular academic tasks.
6. The subscale "***Effect on Students' School Attendance Rates***" got the weighted mean of 3.44 and a standard deviation of 0.50 which supports the notion that physical classroom presence positively influences attendance. This further emphasizes the perceived importance of face-to-face instruction in promoting consistent attendance among students.

Recommendations

The following recommendations were formulated based on the study's results.

1. Expand the demographic scope of the study by including a more diverse sample in terms of geographical location, socio-economic background, and cultural factors. This would contribute to a more comprehensive understanding of how various student populations perceive and benefit from face-to-face learning.
2. Conduct longitudinal studies to track the impact of face-to-face learning over an extended period. This approach can provide insights into the sustainability of positive perceptions and whether there are any evolving trends or changes in students' attitudes and productivity over time.
3. Explore comparative studies that analyze the impact of face-to-face learning in contrast to other learning modalities, such as fully online or hybrid approaches. This can offer a nuanced perspective on the effectiveness of different instructional methods and their influence on student productivity.
4. Complement quantitative findings with qualitative research methods, such as interviews or focus group discussions, to gain deeper insights into the subjective experiences and perceptions of students. Qualitative data can provide context and enrich the understanding of the factors influencing students' views on face-to-face learning.
5. Extend the research to include the perspectives of teachers and educational institutions. Investigate how educators perceive the impact of face-to-face learning on student productivity and explore any institutional strategies implemented to enhance the effectiveness of traditional classroom settings.
6. Given the increasing integration of technology in education, future research could delve into how technology affects the dynamics of face-to-face learning. Explore how the use of digital tools and resources in traditional classrooms influences students' engagement, performance, and overall productivity.
7. Consider the influence of cultural and contextual factors on students' perceptions of face-to-face learning. This could involve examining how cultural differences or specific contextual challenges may shape students' attitudes towards traditional classroom settings.

Compliance with Ethical Standards

This research strictly adheres to the ethical standards set by the institution and the body of knowledge. All information and data coming from the respondents are solely for

academic purposes only. In line also with the Data Privacy Act of 2012, the researchers strictly preserved the anonymity and confidentiality of the respondents.

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MEASURING THE LEVEL OF CRITICAL THINKING ABILITY OF THE STUDENTS USING WATSON – GLASER APPRAISAL

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ABSTRACT

The study measures the level of critical thinking ability of students in terms of argument, assumptions, deduction, interpretation, and interference from the perspective of senior high school students from Valencia National High School, Valencia City High School, Paramount School of Arts, Languages, Management, and Sciences, Inc., and STI College – Valencia. The study employed a descriptive method. The study involved 137 senior high school students from different institutions who accomplished the 59-item assessment instrument based on the Watson – Glaser Critical Thinking Test. Data were analyzed using descriptive statistics. The results revealed that the extent of the critical thinking ability of senior high school students is low. This implies that the critical thinking ability of senior high school students is relatively low in the different parts of the test. Results further suggest the level of critical thinking ability of students in terms of argument, assumptions, deduction, interpretation, and interference must be improved and go beyond mere recollection, recognize presumptions, and take into account other points of view.

Keywords: *Critical Thinking, Argument, Assumption, Interpretation, Inference, Deduction*

INTRODUCTION

Critical thinking is an analytical process that involves drawing conclusions, analyzing, explaining, and disputing while also developing one's cognitive processes. It also involves concluding pertinent evidence (Supriyatno, Susilawati, & Hassan, 2020). However, educational systems often need to cultivate these abilities in students adequately.

To effectively traverse the complicated nature of the 21st century, students must cultivate critical thinking abilities. The absence of emphasis on critical thinking techniques in educational institutions has been noted as a major barrier. According to research by Velayati et al. (2020), rote memorization and little exposure to different viewpoints cause pupils to frequently fail when trying to apply critical thinking skills in reading. In a similar vein, Aydin et al. (2023) suggest that there may be a discrepancy between curriculum goals and real classroom procedures, wherein critical thinking is not deliberately promoted.

Motivation and involvement among students present another difficulty. Critical thinking skills can be hampered by passive learning techniques and a lack of personal interest in the subject matter, according to research by Lopez et al. (2022). This is consistent with research by Chen et al. (2021), which found a link between students' growth in critical thinking and autonomy. Students are more inclined to think critically if they feel free to investigate subjects and pose questions. The cognitive biases and limits of students themselves can also be problematic. Critical thinking might be hampered by unconscious biases and the fear of being incorrect, according to a study by Osman (2020).

The study by Putri (2014), using critical thinking standards, revealed that the students needed to answer questions related to clarity, accuracy, precision, logic, and relevance. Moreover, it also shows that the students need help understanding the writer's position and reading between the lines. These findings concluded that the critical thinking ability of the students is weak. Velayati et al. (2017) also revealed that the students got the lowest scores on the critical thinking ability questionnaire. It also emphasized that critical thinking is difficult for them.

In this study, the researchers aim to measure the level of student's critical thinking using the different dimensions of the Watson - Glazer critical thinking test, specifically in terms of arguments, assumptions, deductions, interpretations, and inferences.

Research Questions

This research focuses on measuring the level of critical thinking skills of the students through Watson - Glazer Critical Thinking Test. Specifically, the study attempts to answer the following points:

1. What are level of student’s critical thinking ability in terms of:
    a. Argument;

b. Assumption;
c. Deduction;
d. Interpretation and;
e. Inference?

METHODOLOGY

This quantitative research utilized descriptive design to assess the critical thinking ability of the students. The study is conducted at Paramount School of Arts, Languages, Management, and Sciences, Inc., Valencia National High School, Valencia City High School, and STI College – Valencia. The respondents were 137 senior high school students from the abovementioned schools in Valencia City, Bukidnon.

Table 1: Scale description of Watson – Glaser Critical Thinking Test

Scale	Placement of	Scale Description
Argument	4 statement 14 Indicators	This critical thinking will assess your ability to reason logically when analyzing arguments.
Assumption	4 statement 13 Indicators	This critical thinking test will assess your ability to make logically justified assumption based upon the statement provided.
Deduction	4 Statement 12 Indicators	This critical thinking test will assess your ability to deduce information and reason logically using the
Interpretation	4 Statement 12 Indicators	This critical thinking test will assess your ability to interpret information into logical conclusions based upon the statement provided.
Inference	2 Statement 8 indicators	Is a conclusion drawn from observed or supposed facts.

This study utilized the Watson-Glaser Critical Thinking Appraisal designed to assess a person's critical thinking abilities. The questionnaires had an internal consistency reliability (Cronbach alpha coefficient) of 0.85 through pilot testing, which indicated good consistency and high reliability. The instrument used a scale to estimate the data from the participants. The data collected will be analyzed using descriptive statistics.

The evaluation of student's critical thinking test is determined by the table above. The argument will determine the ability to know how to make important decisions. It is important to distinguish the ability to argue. The assumption will determine the student's critical thinking, which is presupposed or taken for granted. The deduction will determine the student's capability to reason logically. The interpretation will determine whether the

students will assume all information in the passage and follow beyond a reasonable doubt from the information. The inference was determined by observing the information. It is important to know the student's observations and understanding.

RESULTS AND DISCUSSION

Table 2: Overall Mean Scores of the Different CT tests

Critical Thinking Tests	*Mean Score*	*Descriptive Rating*
Argument Test	52	Needs Improvement
Assumption Test	53	Needs Improvement
Deduction Test	73	Good
Interpretation Test	48	Poor
Inference Test	48	Poor
Average	55	Needs Improvement

Legends:

Range	*Description*
1 – 39	Very Poor
40 – 49	Poor
50 – 59	Needs Improvement
60 – 69	Satisfactory
70 – 79	Good
80 - 89	Very Good
90 – 100	Excellent

A. Argument Test

The results revealed that the average score of all the statements is 52 over 100 that indicates “needs improvement”. This implies that many students struggles with their argumentation skill especially on deciding which one weak or strong argument is. Identifying whether it is a strong or a weak arguments, it requires analyzing each arguments if it is both important and directly related to the statement and question. With this almost half of the students find it hard to assess the trivial aspect of the arguments and they are confused with the correlation of causation.

According to the study of Rusmini, Suyono, and Agustini (2021), many students are aware of their shortcomings in analyzing argumentation skill questions. Based on the analysis of the data obtained, students have not been able to give a strong reason for an argument and draw a conclusion well. In a similar study of Landrieu, De Smedt, Van Keer, & De Wever (2022), the result reveals the low to moderate argument skills after evaluating 130 argumentative text from the senior high school students. Additionally, a decline in argumentative skills of the students is observed after the reopening of classes after the pandemic.

B. Assumption Test

The findings of the study revealed the mean score of the students which is 53 which indicates “needs improvement”. This implies that almost half of students struggles with their assumption skills. They find it difficult to identify whether assumption is taken for granted and logically justified.

In the study of Aiyub, Suryadi, Fatimah, and Kusnandi (2021), the data they obtained shows that the students fail to understand the concept well and cannot bridge the information in relation to the question as a whole. The assumption skill of the students is low because the students are having hard time in understanding keywords contained in the questions. It can also be supported by the study of Fortus (2009), it reveals the students is having difficulty in making constraining assumptions and only the students who had prior experience were able to make assumptions and understand real world problems.

C. Deduction Test

The table above shows the mean score of the deduction test. It reveals the overall mean score of 73 which indicates “good”. This implies that almost 75 % of the students have good deduction skills. It signifies that the students can deduce information and reason logically in order to make a sound conclusion.

In the study of Kumar (2017), the deduction skills of the students is assessed and it reveals a high score. It enables students to draw valid conclusions, identify flaws in arguments, solve problems effectively, build knowledge, and communicate clearly. Mastering deduction give the students a powerful base for navigating the complexities of information and making well-informed decisions in a world full of ambiguity. The study of Hamad, Ahmed and Al (2021) reveals that the students excel at analyzing evidence and drawing well-supported conclusions. They can identify key indicators, differentiate between observations and inferences, and evaluate the validity of conclusions based on available data.

D. Interpretation Test

The results of the interpretation skills of the students revealed the mean score of 48 which indicates “poor”. It implies that majority of the students is struggling with their interpretation skills. It is difficult for the students to judge whether or not each of the proposed conclusions logically follows beyond a reasonable doubt from the information given in the paragraph.

The study of Hasanah, Sunarno, and Prayitno (2020) revealed that 46.87% of the students are categorized as low level in terms of critical thinking skills. Of the six critical thinking indicators, the interpretation indicators get the lowest average score, which is less than 40%. This is caused by several factors both from within the student (internal factor) and from the learning process (external factor). This finding is further supported by Yennita, Zulirfan, Irianti, Tukan, Ananda, & Naza (2023). The result of their

descriptive analysis revealed that the students' ability to interpret is in a low level category. This gives information to teachers that training and strengthening interpretation skills still need to be a concern. Henceforth, it is necessary to apply learning strategies to improve interpretation abilities.

E. Inference Test

The result revealed an overall score of 48 correct answers which indicates "poor". This implies that the students' inference skill is in need of improve due to its low mean score. The students' struggles to identify the inference or the conclusion is true and correct follows beyond a reasonable doubt.

The study of Kamsinah and Suryajaya (2020) reveals that only 25 % of students have good to better inference skills which signifies low category this is because students have not been able to identify the elements needed to settle conclusions and provide evidence of the truth of a statement or reasoning. The students that are still low indicate that the need for improvement of the learning process in the classroom.

F. Overall Result

The table 2 shows the overall mean scores of the different critical thinking tests namely: Assumption Test (52), Argument Test (53), Deduction Test (73), Interpretation Test (48), and Inference Test (48). It reveals the average score of 55 correct answers. It implies that the critical thinking skills of the students must be improved due to relatively low scores in the different part of the tests.

Senior high school students scored low in several aspects of critical thinking, including formulating problems, providing arguments, and analyzing results. The researchers suggest that argumentation-based learning could be a promising approach to improve critical thinking skills (Anggraeny, Said, & Febriani 2020)

Conclusions

The study aimed to study the level student's critical thinking ability using the Watson - Glaser appraisal specifically in the following dimension of critical thinking such as arguments, assumption, deductions, interpretations, and inferences.

The results revealed that the argument test scored 52 which means "needs improvement"; assumption test scored 53 means "needs improvement"; deduction test scored 73 means "good"; interpretation and inference test scored 48 which means "poor". Overall, the results indicated that the student's critical thinking ability requires relative improvement.

It is crucial to emphasize that the results does not dismiss the possibility that the respondents might inherently possess inadequate critical thinking skills, contributing to the overall difficulty experienced during the test. Further investigation into these factors

could provide valuable insights into improving educational strategies and addressing specific areas of difficulty for students.

Recommendations

Students' success both academically and personally depends on developing their critical thinking skills. These are some important tactics to think about. Initially, give open-ended questions in the classroom top priority. Asking "why" and "how" questions pushes students to go beyond mere recollection and instead examine material, recognize presumptions, and take into account other points of view. Socratic seminars and debate-style exercises work well to promote this kind of critical conversation.

Second, incorporate exercises that make students assess sources. Activities such as evaluating media bias, examining arguments for logical fallacies, and contrasting study approaches provide pupils the ability to separate fact from opinion or manipulation. Lastly, promote introspection and metacognition. Encourage pupils to reflect on their own prejudices, presumptions, and cognitive processes. Engaging in activities such as journaling about their experiences with learning or getting feedback from peers on their strengths and limitations in critical thinking can greatly aid in their development as more self-aware learners.

By putting these techniques into practice, teachers can enable their pupils to develop into critical thinkers who can competently negotiate the challenges of the twenty-first century.

Compliance with Ethical Standards

This study complied with all applicable ethical norms and regulations, which included getting participants' informed consent, protecting data confidentiality and anonymity, and refraining from any actions that would endanger or upset people. In addition, the research approach was transparent and objective, and the results were presented truthfully and impartially.

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MEASURING THE RIPPLE EFFECT OF POOR SLEEP HABITS ON STUDENT'S STRESS LEVEL

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ABSTRACT

Sleep holds immense significance in our lives, intertwining with both our physical and mental health. Presently, the pursuit of academic excellence and the surge in digital advancements have notably influenced students' lives, notably affecting their sleep routines and general welfare. The repercussions of inadequate sleep among students extend far beyond mere tiredness; it creates a domino effect that markedly heightens their stress levels, subsequently affecting their academic performance and overall quality of life. This study examined the sleep behaviors of Grade 11 and 12 students enrolled in the Humanities and Social Sciences Strand, involving 75 participants who completed a comprehensive survey questionnaire. The survey outcomes shed light on their demographic profiles, sleep patterns, the impact of insufficient sleep, and the strategies employed by students to counter its effects. Through meticulous analysis employing descriptive statistical methods, the study revealed diverse sleep patterns among Humanities and Social Sciences students, with a majority experiencing poor sleep quality. Moreover, it uncovered various coping mechanisms employed by these students to mitigate the adverse effects of inadequate sleep. Ultimately, the study underscores the profound impact of poor sleep habits on the overall well-being of students in this academic domain. The findings of the research highlight the necessity of focused interventions and support networks inside educational institutions to raise students' performance in school and overall quality of life. The findings may help educators, parents, and policymakers put strategies into place that will help students with sleep-related problems and improve their health and academic performance.

Keywords: *sleep habits, coping techniques, students, academic performance, sleep quality*

INTRODUCTION

Nowadays, the pursuit of academic excellence and the rise of digital innovations has influenced the lives of the students, particularly their sleep patterns and overall well-being. Late- night study sessions, paper works, meetings, and school related activities are the main priorities of students rather than the advised seven to nine hours of sleep. Indeed, sleep plays a pivotal role in our lives, as it relates to both our physical and mental health. Among the various demographic groups, students, specifically those in senior high school and college, often face challenges in maintaining healthy sleep habits. This has led to the continuous and growing issue of erratic sleep schedules and poor sleeping habits. The effects of poor sleep among students go beyond simple exhaustion; it includes a ripple effect that significantly impacts students' stress levels and, consequently, their academic performance and overall quality of life.

In the study conducted by Hirshkowitz et al. (2015), they have mentioned that every individual must have seven to ten hours of sleep to gain energy and be able to function properly. Although this data is not standardized and there are handful studies which state the effectivity of it. Additional studies can be conferred to further expand the number of sleeps. Depending on different factors that can be considered towards it like the age, sex, lifestyle and the like. However, most students are not getting the right amount of sleep they need. This can be seen by the fact that students do a lot of schoolwork and activities which can be a factor in the decline of their sleep time.

Recent statistics show that 97% of teenagers do not achieve the recommended amount of sleep (Statista Research Department, 2018). Accordingly, a medical news report from the US even stated that this growing concern on lack of sleep is largely due to stress, with 68% of students staying awake due to school-related activities Kim et al. (2018). Only 30% of students manage to get eight hours of sleep a night, which is the recommended amount of sleep. Lastly, about 20% of students pull all-nighters at least once a month. In the Philippines, sleep deprivation is one of the major growing concerns. As per the Healthy Living Index Survey (2016), the Philippines has one of the highest rates of sleep deprivation in Asia, with 46% of Filipinos not getting proper sleep and 32 % sleeping for less than six hours. This can hinder the daily performance of a person since sleep is vital towards the proper functioning of one’s body.

This chronic lack of sleep has a detrimental impact on productivity among Filipinos, as noted in the study of Sygaco (2020). The lack of sleep has huge negative impacts on day-to-day activities, particularly academic performance. Considering the above-mentioned data, lack of sleep can risk health and the academic performance of the students. Students can perform low during their classes if they don’t have the necessary amount of sleep. While chronic diseases can emerge if the student doesn't have the latter. Stress levels and different psychological problems can emerge due to sleep deprivation.

Hence, the major aim of this study is to investigate the ripple effect of sleep deprivation on one's stress level.

To this day, there is a scarcity of literature and research in the Philippines that delves into the consequences of poor sleep habits, particularly regarding students' stress levels. There is only a limited number of literatures that explores this topic and the global studies available are also outdated. The existing research on the ripple impact of inadequate sleep has prompted the researchers to pursue a comprehensive study to thoroughly evaluate the ripple effects of poor sleep habits on the stress levels of students. This study primarily aims to shed enlightenment on the intricate relationship between students' sleep habits and their experience of stress. By systematically understanding the associations and interconnections between sleep patterns, sleep habits, and stress, this study aspires to provide valuable insights into how these factors affect various aspects of students' lives and particularly contribute to their overall quality of life.

Unveiling the factors that constitute a student's stress level.

In the study conducted by Kosheleva et al., (2015), results showed heavy workload, lack of sleep, and deadline pressure as common factors of stress in their studying. The study found several stressors that had a huge impact on how well students performed in school. The numerous and continuous tasks that were frequently too much for students to handle were one of the stressors mentioned. This can be seen as a hindrance towards the learning development of the students given the fact that students who don't have the appropriate amount of sleep find it difficult to comprehend the lessons shared with them. Subsequently, in the study of Nollet et al. (2020), they found out that sleep deprivation and stress reciprocate with each other. Since if a person doesn't have an ample amount of sleep it can result in stress since our body's mechanism to adapt with the problem inside our body. In addition, if a person encountered stress it can result in poor performance specially on students who are sleep deprived.

Lack of adequate sleep made maintaining a challenging academic curriculum much more difficult. Students also struggled with the pressure brought on by approaching deadlines, which added to their general state of academic pressure, anxiety, and stress. These stressors can cause a person to have anxiety plus the factor that students don't have the appropriate amount of sleep just to do their different schoolwork. Social aspects also affect students' stress levels which include bullying and peer pressure. Alotaibi et al. (2020) have indicated that there is a correlation between elevated stress levels and reduced academic achievement. Nevertheless, suitable coping mechanisms have been demonstrated to assist learners in managing the adverse effects of psychological distress. This means that there is a reciprocation between the stress level and academic performance due to lack of sleep among the students. The aftermaths of this one can be detrimental to the student's mental health and their academic performance.

Poor Driven Academic Achievements Caused by Stress

Stress caused by sleep deprivation can produce numerous impacts on a person. Specifically, students since stress can deescalate the level of academic engagement and achievement of the latter. According to Pascoe et al., (2020), academic stress influences secondary and tertiary students' mental and physical health and leads to a variety of academic concerns. This claim is alarming since the students aim is to attain good grades, but the aftermath is their health being at risk due to various factors. Increased levels of academic stress generally result in poor academic performance. Students who experience high levels of academic stress find it difficult and challenging to perform at their best in class. Stress produces a variety of issues, including trouble paying attention and low motivation, all of which interfere with learning and academic progress. Those effects can severely hinder knowledge acquisition and even dismantle the learning outcomes of the students.

As per the result in the study conducted by Faizi et al. (2015), in India students, respectively, experienced high or extremely high levels of exam anxiety and academic stress. Due to their midnight reviewing and high expectations from their environment. Though all students expressed high levels of academic stress, the stress levels of those with lower grades were higher than those with higher marks. Azad et al. (2015) indicated in their study the significance for educational institutions to address stress as it hinders students' ability toward their educational objectives. Apart from prioritizing overall learning outcomes, it is equally crucial to consider the welfare of every single student. Additionally, educational institutions can also consider a variety of factors why students experienced academic stress that can result in poor academic performance.

Research Questions

This study aims to determine the ripple effect of poor sleep habits on students' stress levels. Specifically, it sought to answer the following questions:

1. How may the demographic profile of the senior high school student respondents be described in terms of:
   1.1. sex.
   1.2. age.
   1.3 Grade/Year Level
2. How does the respondent’s demographic profile, such as sex, gender, strand, and grade level, influence their sleep habits and stress levels?
3. What are the students' sleep patterns, including the average bedtime, sleep duration, and common sleep habits on both weekdays and weekends?
4. How does the relationship between students’ sleep habits and stress levels impact various areas of their lives, including academic performance, mental health, and their general state of well-being?
5. What coping techniques do students use to lessen the adverse effects of poor sleep habits on their stress levels?

METHODOLOGY

This study was carried out using a descriptive-quantitative approach. According to Apuke (2017), quantitative research is an organized approach to gathering and interpreting data from various sources. In response to this, Watson (2015) stated that to generate results, quantitative research employs mathematical, statistical, and computational. Meanwhile, in the lens of Siedlecki (2021), a descriptive research approach is used to gather information from a group of respondents. It has many advantages and benefits for data collection and analysis. This design will be employed by the researchers since the main purpose of this study is to measure the ripple effect of poor sleep habits on students' stress. In terms of the study's participants, the senior high school students of Humanities and Social Sciences Strand (HUMSS) at a higher educational institution situated in Pampanga, Philippines were recognized as the respondents to the study.

There were 75 identified respondents in the quantitative phase of the study. The said number of respondents answered the survey questionnaire. Subsequently, this study employed a survey questionnaire as the main data-gathering instrument. The questionnaire contains twenty-one (21) questions. The questionnaires are distributed to the respondents. In gathering the data coming from the respondents, the researchers carefully considered the research ethics as well as the proper data gathering procedure ensuring that all the data garnered will be used solely for academic purposes only. Meanwhile, the responses gathered from the survey questionnaires of senior high school students underwent statistical analysis, aligning with the study's data requirements. Descriptive Statistics is used to summarize data in an appropriate and relevant way by summarizing the primary details, according to Mishra et al. (2019). Descriptive Statistical Analysis was chosen by the researchers to assess the impact of inadequate sleep habits on Grade 11 and 12 students' academic performance, physical and mental health, and overall well-being. This method simplifies the gathered data using charts, graphs, and tables, effectively aiding in the comprehension of information from the respondents.

RESULTS and DISCUSSION

Demographic Profile of the Respondents

Sex

Table 1 indicates the respondent's demographic profile. 30 of them are male and 45 of them are female. Most of the respondents are female, with 60 percent over the whole percentage, while the male respondents are 40 percent over 100 percent. 60 percent females and 40 percent male.

Age

Table 1 presents the demographic profile distribution of the respondents in the study,
encompassing individuals within the age range of 16 to 19. 28 percent of the whole population is under 16 years old, which consists of 21 respondents, while 49. 33 percent of 100 are under 17 years old, which consists of 37 respondents. 20 percent of the population is 18 years old, which consists of 15 respondents, and the remaining 2. 67 percent are 19 years old, which consists of 2 respondents. Most of our respondents are 17 years old, the sum of all the percentages is equal to 100 percent.

Grade/Year Level

Table 1 shows the frequency distribution and the percentage of the grade or year level of the respondents involved in this study. These are the senior high school grade 11 and grade 12 students under Humanities and Social Sciences Strand. The 31 respondents are grade 11 students, which is equivalent to 41. 33 percent of the population, while there are 44 respondents who are grade 12 students, that is equivalent to 58. 67 percent.

Table 1. *Frequency Distribution and Percentage of the Respondents demographic profile*

Demographic profile		**Frequency**	**%**
Sex			
	Male	30	40%
	Female	45	60%
Age			
	16 y/o	21	28%
	17 y/o	37	49. 33%
	18 y/o	15	20%
	19 y/o	2	2. 67%
Grade/ Year Level			
	Grade 11	31	41.33%
	Grade 12	44	58.67%

Demographic Profile's Influences on Students Stress Level

According to the gathered data from the researchers, a mean of 3.08 and a standard deviation of 0. 77 (agreed) that the academic strand that the respondents are enrolled in affects their sleep patterns and overall stress. According to Bianzon et al. (2024), the Humanities and Social Sciences Strand is for learners who aim to take up journalism, communication arts, liberal arts, education, and other social science-related courses in college. With this, HUMSS students often face much schoolwork including written work, reporting, and performance tasks. Table 2 also shows a mean of 2.67 and a standard deviation of 0. 87 (agreed) that their grade level has a significant impact on their sleep quality. Furthermore, a mean of 3.13 and a standard deviation of 0. 71 (agreed) that their stress level is highly influenced by academic requirements. In the study conducted by Bergin & Pakenham (2016) it was found that academic commitments, such as an abundance of homework, strict deadlines, and high-performance expectations, significantly raise stress levels. While, in the question "Does your gender play a role in how stressed you are as a student? "There is a mean of 2.41 and a standard deviation of 0. 86, indicating a disagreement. Overall, the combined results show that demographic profile has an impact on the stress level of the students with a weighted mean of 2.84 indicating agreement.

Effect of poor sleep habits on students' overall well-being

According to the results of the gathered data, the subscale "Effect of poor sleep habits on students' overall well-being" has a weighted mean of 3. 14 and a standard deviation of 0.14, which means that the respondents "Agreed," with the items listed on the said subscale. A mean of 3.26 and a standard deviation of 0. 92 (strongly agreed) that they have missed assignments or exams due to insufficient sleep. While a mean of 3.00 and a standard deviation of 0.92 (agreed) to have trouble in understanding the lessons due to poor sleep. Table 2 also reveals a mean of 3. 32 and a standard deviation of 0. 71 (strongly agreed) that the lack of sleep affects the respondent's ability to concentrate on their studies. Moreover, A mean of 3. 08 and a standard deviation of 0. 86 (agreed) that sleep habits have a significant impact on their academic performance. Hershner and Chervin (2014) imply that there is an association between students' performance in school and their sleep quality. Academic performance has been linked to sleep deprivation; when a person fails to get enough sleep night after night, their ability to learn—including their memory, attentiveness, and problem-solving abilities—is significantly impacted. Students who deal with all the problems are likely to have lower grade point averages. (Chiang et al. 2014). Moreover, A mean of 3.30 and a standard deviation of 0.65 (strongly agreed) In the question "Does sleep habits affect your physical health like your energy levels and immune system ". Table 2 also obtains a mean of 2. 92 and a standard deviation of 0. 89 (agreed) that sleep issues contribute to feelings of anxiety or depression. Lastly, a mean of 3.14 and a standard deviation of 0. 82 (agreed) that poor sleep habits negatively impact the respondent's mental health and overall well-being.

Students coping mechanism.

Table 2 shows the mean and standard deviation on the coping mechanism of the students. The corresponding subscale has a weighted mean of 2.79 and a standard deviation of 0.17, indicating that most respondents "Agreed" on the matter. In a study conducted by Baqutayan (2015), they have concluded that coping mechanisms affect people by changing how they view and respond to stressful situations, in addition to influencing the quality of their sleep. A mean of 2.77 and a standard deviation of 0. 72 (agreed) that they participate in physical activities like exercise to relieve the stress brought on by lack of sleep. While a mean of 2. 70 and a standard deviation of 0. 92 (agreed) that the respondents engage in relaxation activities, such as yoga or meditation, to manage stress from poor sleep. In the question, “Do you spend time with your friends or family members to alleviate stress caused by poor sleep habits?” a mean of 2. 94 and a standard deviation of 0.72 (agreed) has been obtained. On the other hand, there is a mean of 2.49 and standard deviation of 0.88 (Disagree), on the question if they use relaxation techniques like deep breathing, meditation to manage stress caused by poor sleep. This table also reveals that there is a mean of 2.98 and a standard deviation of 0.73 (agreed) on students consuming caffeinated beverages to counteract the effects of insufficient sleep. Lastly, 2.86 mean and 0. 67 (Agreed) to practice self-care like focusing on health and nutrition to prevent the adverse effects of poor sleep.

Table 2. *Descriptive Statistics of the Survey Questionnaires Results*

Benchmark Statements for Poor Sleep Habits	Mean	SD	Verbal Interpretation
Demographic Profile’s Influences on Students Stress Level			
1. Does the academic strand you are enrolled in affect your sleep patterns and overall stress?	3.08	0.77	Agree
2. Do you feel that your grade level has a significant impac on your sleep quality?	2.76	0.87	Agree
3. Does your stress level being influenced by the academic requirements associated with your current grade level ?	3.13	0.71	Agree
4. Does your gender play a role in how stressed you are as a student?	2.41	0.86	Disagree
Weighted Mean	**2.84**	**0.28**	**Agree**
Effect of poor sleep habits on students' overall well-being			
1. Do you miss assignments or exams due to insufficient sleep?	3.26	0.92	Strongly Agree
2. Do you have trouble in understanding the lessons due to poor sleep ?	3.00	0.92	Agree

3. Does Lack of sleep affects your ability to concentrate on your studies ?	3.32	0.71	Strongly Agree
4. Do you think your sleep habits have a significant impact on your academic performance?	3.08	0.86	Agree
5. Does your sleep habits affect your physical health (e.g., energy levels, immune system).	3.30	0.65	Strongly Agree
6. Do Sleep issues contribute to feelings of anxiety or depression ?	2.92	0.89	Agree
7. Do you think poor sleep habits negatively impact your mental health and overall well-being?	3.14	0.82	Agree
Weighted Mean	**3.14**	**0.14**	**Agree**
Students Coping Mechanism			
1. Do you participate in physical activities like exercise to relieve the stress brought on by lack of sleep.	2.77	0.72	Agree
2. Do you engage in relaxation activities, such as yoga or meditation, to manage stress from poor sleep.	2.70	0.92	Agree
3. Do you spend time with your friends or family members to alleviate stress caused by poor sleep habits?	2.94	0.72	Agree
4.Do you use relaxation techniques (e.g., deep breathing, meditation) to manage stress caused by poor sleep.	2.49	0.88	Disagree
5. Do you consume caffeinated beverages (e.g., coffee, energy drinks) to counteract the effects of insufficient sleep.	2.98	0.73	Agree
6. Do you practice self-care like focusing on health and nutrition to prevent the adverse effects of poor sleep?	2.86	0.67	Agree
Weighted Mean	**2.79**	**0.16**	**Agree**
Grand Weighted Mean	**2.85**	**0.17**	**Agree**

The sleep habits of the students

12 respondents had an 8 - 9 pm bedtime which is equivalent to 16 percent, while there are 23 respondents who answered 10-11 pm as their bedtime during weekdays that is equivalent to 30. 67 percent. Most of the respondents answered 12 - 1 am as their bedtime during weekends, specifically 40 respondents, which is equivalent to 50 .33 percent of respondents. On the other hand, 0 respondents answered 6 - 7 pm as their

bedtime during the weekdays. In the question about the respondents' bedtime during weekends, 11 students had a bedtime of 8 - 9 pm during the weekends, equivalent to 14. 66 percent. While the number of respondents who have a bedtime of 10 - 11 pm and 12 - 1 am tied. 32 respondents answered 10 - 11 pm as their bedtime during the weekends, equivalent to 42. 67. Similarly, 32 respondents answered 12 – 1 am as their bedtime during the weekends, equivalent to 42. 67. On the other hand, no respondents answered 6 - 7 pm as their sleeping time during the weekends. In the hours of sleep of the respondents on Weekdays, an average of 2. 67 percent have 10 - 11 sleeping hours, equivalent to 2 respondents. While 12 respondents, equivalent to 16 percent answered 8 - 9 sleeping hours on weekends. 30 respondents had 4 - 5 sleeping hours equivalent to 40 percent. Most of the respondents had sleeping hours of 6 - 7 on weekdays, equivalent to 41. 33 percent. The 9 respondents, equivalent to 12 percent claimed that they have 10 - 11 hours of sleep during the weekdays. While an average of 21. 33 percent, equivalent to 16 respondents have 4 - 5 sleeping hours. An average of 28 percent has 8-9 sleeping hours on weekends. Lastly, most of the respondents had 6 - 7 sleeping hours equivalent to 29 respondents during the weekends.

Table 3. *Sleep Habits*

Sleep Patterns		**Frequency**	**%**
Bed Time on weekdays			
	6 - 7 pm	0	0
	8 - 9 pm	12	16 %
	10 - 11 pm	23	30. 67%
	12 - 1 am	40	50. 33 %
Bed Time on weekends			
	6 - 7 pm	0	0
	8 - 9 pm	11	14. 66 %
	10 - 11 pm	32	42 .67 %
Hours of sleep on weekdays	12 - 1 am	32	42.67 %
	4 - 5 Hours	30	40 %
	6 - 7 Hours	31	41.33 %
	8- 9 Hours	12	16 %
Hours of sleep on weekends	10 - 11 Hours	2	2. 67 %
	4 - 5 Hours	16	21.33 %
	6 - 7 Hours	29	38. 67 %
	8 - 9 Hours	21	28 %

	10 – 11 Hours	9	12 %

Conclusions

The following are the conclusions in accordance with the summary of the results.

1. The respondents of this study are the Humanities and Social Sciences students, mostly female students. In terms of age, the respondents range from ages 16–19-year-old. Most of the respondents are Grade 12.
2. The researchers have drawn from the study that academic strands, grade levels, and academic requirements significantly influence the sleep patterns, stress levels, and ultimately, the overall well-being of the respondents. Additionally, while there is a disagreement on gender's impact on students' stress levels, the weighted mean indicates that demographic profiles do have an impact on stress levels among students.
3. The study's analysis of respondents' bedtime routines on weekdays and weekends, along with the number of hours of sleep they received, indicates that a significant number of respondents had inconsistent sleep schedules and insufficient sleep, especially on weekdays. This aligns with the reported impacts on academic performance, concentration, and mental health issues.
4. The researchers have drawn from the study that students often take part in a variety of activities to combat the stress-causing effects of sleep deprivation. Students use a variety of ways to reduce stress caused by sleep deprivation, including self-care, relaxation techniques, physical activity, and social interaction with family and friends, and consumption of caffeinated beverages.
5. The humanities and social sciences strand students at a higher educational institution situated in Pampanga often face challenges in maintaining proper sleep habits, and this has led to the continuous stress issues of students. The impact of stress on students does not only affect their physical health; rather, it creates a detrimental effect on their overall quality of life. There are also coping techniques that students employ that are not very appropriate, like the consumption of caffeinated beverages.

Recommendations

In line with the findings and conclusion of the study, the researchers arrived at the proceeding recommendations:

1. Facilitate and promote healthy coping strategies in the educational setting, such as exercising, practicing mindfulness, and taking care of oneself. Encourage

students to include these activities in their regular routine and inform them of the risks associated with using caffeinated beverages as a remedy for insufficient sleep.

2. Educators should conscientiously evaluate academic requirements, ensuring a balanced workload that does not overwhelm students with excessive assignments or tasks. This will make it possible to strike a healthier balance between students' wellbeing and their academic responsibilities.

3. Incorporating sleep education into the curriculum to help the students be enlightened on how important proper sleep hygiene is to their general health and academic success. By implementing this, students will get the knowledge and skills necessary to prioritize and control their sleep schedules to improve their overall state of well-being. By doing this, parents will also be enlightened about their children's sleep habits.

Compliance with Ethical Standards

This research strictly adheres to the ethical standards set by the institution and the body of knowledge. All information and data coming from the respondents are solely for academic purposes only. In line also with the Data Privacy Act of 2012, the researchers strictly preserved the anonymity and confidentiality of the respondents.

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MIXED METHODS RESEARCH ON IMPLEMENTATION OF LIVELIHOOD PROGRAMS AND QUALITY OF LIFE AMONG MARGINALIZED SECTORS IN CALAMBA CITY

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ABSTRACT

This mixed methods study was conducted to determine the level of implementation of livelihood programs and the level of quality of life among marginalized sectors in Calamba City, Laguna. The study used sequential explanatory design. For the quantitative data, purposive sampling was used for 150 respondents from selected marginalized sectors who had access to different livelihood programs offered by the government. For the qualitative data, purposeful sampling was used for 10 participants to provide deeper insights into the study. Validated researcher-made survey instruments and semi-structured interview questions were used in data gathering. Using the four-point Likert scale, frequency, and mean, findings revealed that livelihood programs were implemented in marginalized sectors in terms of applicability, acceptability, marketability, and sustainability. The findings on the quality of life of marginalized sectors were satisfactory in terms of life satisfaction, affluent life, and rich life aspiration. There was a significant relationship between the level of implementation of livelihood programs and the quality of life among marginalized sectors. Using Thematic Analysis, the themes that emerged from the respondents' interviews of their lived experiences were Farming, Poultry, and Fishing Government Initiated Programs; Government Initiatives; Income and Agricultural Materials; Assistance Strategy, Adjustment Strategy, and Expansion Strategy; Farming, Fishing, and Poultry-Raising; Availability, Reliability, and Technical Efficiency; Marketing and Financial Strategies; Personal and Financial Development; and, Sustainability of Livelihood Programs and Children's Education. A livelihood program was proposed as the output of the study.

Keywords: *Implementation, Livelihood Programs, Quality of Life, Marginalized Sectors*

INTRODUCTION

Marginalization has been a prevalent issue as it is subjected to multiple forms of discrimination and exclusion in political, social, and economic life due to unequal power relationships in economic, political, and social dimensions. This has led to a vulnerability that deprives people of having a voice over their lives and available resources, identity because of limited opportunities for social and economic growth, and even place in the community.

As it is, Republic Act 8425, or the Social Reform and Poverty Alleviation Act explains the individuals and/or families who fall under the poverty threshold and those who cannot afford and sustain their basic needs such as food, health, education, housing, and other amenities in life. Families who belong to marginalized sectors include farmers and fisherfolks; minimum wage earners in the formal sector; migrant workers who experience labor and salary-related abuses; indigent people; women and people with special needs; senior citizens; victims of natural disasters and calamities; young adulthood, students, and children; poor in urban areas; members of cooperative; and those in civil society organizations.

Moreover, Republic Act No. 11291, or the Magna Carta of the Poor provided investments in anti-poverty programs to help the poor actively participate and engage in different programs and activities that accelerated their growth and potential. It also gave the marginalized full access to different governmental services; addressed the needs of vulnerable sectors; and enhanced people's competencies through the implementation of different programs and services for them.

The survey conducted by the National Economic Development Authority (NEDA) (2016) dubbed as 'Ambisyon 2040' described the kind of life Filipinos want to live, and how the country would be whereas 79% of Filipinos aspired to a simple and comfortable life, 16.9% wanted an affluent life, and 3.9% aspired for the life of the rich. The survey also aimed to 'ensure people-centered, efficient, and clean governance' to have a prosperous country where no one is left behind, the people will live longer and healthier, smart and innovative, and have a high trust in society.

This quality of life helped in addressing inequalities and recognizing the importance of marginalized sectors to increase their capacities to help themselves and their communities. Also, it gave them the power or voice in the planning and execution process to achieve the efficiency goals of development organizations.

However, marginalized sectors are prone to experience disparities and lack of empowerment making them poor, earning less, and settling for fewer opportunities. These effects, though unintended, made the marginalized sectors more passive and reliant on development aid, and reduced their voices against inequalities and discrimination in their

socioeconomic growth. That's why, the implementation of government livelihood was important as it ensured and supported changes, and increased acceptability and sustainability, especially in marginalized sectors.

Wokadala et al. (2020) described sustainable livelihood as important in poverty alleviation by surviving different shocks and stresses and improving people's quality of life on a long-term basis. It established a safety net for marginalized groups in transforming their lives through income and opportunities. To be sustainable, a combination of livelihood assets was needed to generate a positive effect in meeting the needs and sustaining their well-being.

Relatively, the study of Sackey and Remoaldo (2019) about livelihood empowerment against poverty was set to measure the intended impacts of programs on beneficiaries, especially in reducing extreme poverty among poor populations, increasing active participation in education, and empowerment in acquiring skills and resources to break the inter-generational cycle. The programs unraveled the irregularities encountered by beneficiaries in proffering policy directions in addressing the issue of poverty.

It is in this regard that the researcher, being one of the employees of the Gender and Development Office (GADO) became interested in pursuing this study. Knowing the stories of marginalized sectors who have experienced lesser access to opportunities, drove the researcher to conduct further study to serve as a living witness of the current situation of the status of these sectors in terms of accessing different livelihood programs from the government. The knowledge of marginalized sectors regarding livelihoods helped create changes in people's potential and their socio-economic growth.

Moreover, the study discerned the relationship of implemented livelihood programs on marginalized sectors in terms of improving their lives, generating additional sources of income, and sustaining the livelihoods provided to them. It measured the interconnectedness of livelihoods to the quality of life of marginalized sectors.

The implication drawn served as a basis for the development plan of future livelihood programs that dealt with improving the lives of marginalized in Calamba City. Thus, it was strongly believed that empowered and competent sectors could make a difference in uplifting their lives and their families' situations.

Research Questions

The purpose of the study was to assess the level of implementation of livelihood programs in Calamba City and how these programs related to the quality of life of marginalized sectors in improving their socio-economic growth. Specifically, it sought answers to the following:

1. Determine the level of implementation of different livelihood programs offered by the City Government of Calamba to marginalized sectors in terms of:

1.1 Applicability,
1.2 Acceptability,
1.3 Marketability, and
1.4 Sustainability.

2. Determine the quality of life among marginalized sectors in terms of:
2.1 Life satisfaction,
2.2 Affluent life, and
2.3 Rich life aspiration.

3. Determine if there was a significant relationship between the level of implementation of livelihood programs and the level of quality of life among marginalized sectors in Calamba City.

4. Describe the lived experience of the participants from the marginalized sectors on to the implementation of livelihood programs and their quality of life.

5. Propose livelihood programs based on the findings of the study.

METHODOLOGY

Research Design

The study utilized the mixed method, particularly the explanatory sequential approach. It was the most appropriate design because the study assessed the level of implementation of livelihood programs among marginalized sectors in terms of their applicability, sustainability, marketability, and acceptability, the quality of life in terms of their life satisfaction, affluent life, and rich life aspiration, significant relationship between the level of implementation of livelihood programs and quality of life, lived experiences of respondents from marginalized sectors, and the livelihood programs that could be proposed.

Creswell (2018, as cited in Foley Library Gonzaga University, 2022) defined the explanatory sequential design as the two-design phase where the quantitative data was analyzed and collected first, then the qualitative data was analyzed based on the results of quantitative data. Qualitative data was also used to explain quantitative data.

Creswell and Plano (2018, as cited in Draucker et al., 2020) described the sequential explanatory design as one of the approaches of mixed method in which the qualitative data was used to enhance and follow up the unexpected quantitative findings. It was often narrating the data to interpret the numeric findings of unexpected events.

The research conducted by Othman et al. (2020) emphasized the use of mixed methods in guiding the actions of individuals and the reflection of the researcher's worldviews. It is referred to as the combination of the strength of both quantitative and qualitative data. In the quantitative phase, the collection of data through survey questionnaire was used for validity and reliability. Meanwhile, for qualitative, there were strategies applied to maintain the trustworthiness which included the in-depth interviews,

transcription and analysis of data, member checking, critical self-reflection, stability, accuracy, to name a few. The integration of data was essential for thorough understanding of phenomenon.

The focus of this approach was to interpret and explain the relationship between variables. The quantitative data were collected and analyzed, following the collection and analysis of qualitative data. The results were interpreted in ways that usually give weight and emphasis to the quantitative data. Separate phrases of design, data collection, and reporting for quantitative and qualitative data were considered strengths and the weaknesses were the time and resources needed for the collection of data separately.

Thus, the researcher applied this research design using quantitative data to assess the level of implementation of livelihood programs and the status of quality of life among marginalized sectors and qualitative data to analyze and interpret the findings of quantitative results.

Research Locale

The study was conducted in Calamba City. This locale was considered because of the familiarity of the researcher who was an employee in the City Government of Calamba, specifically in the Gender and Development Office. The data gathered came from the identified marginalized sectors in the city who were the beneficiaries of livelihood programs. It was beneficial to conduct a study on how the marginalized sectors could access services and opportunities given by the government. The study was conducted during the school year 2023-2024.

Population and Sampling

In this study, purposive sampling was used for the quantitative data of the study and purposeful sampling for the qualitative data of the study. These were the most appropriate samplings as the researcher focused on the lives of marginalized sectors who were the beneficiaries of livelihood programs offered by the city government of Calamba.

According to Campbell (2020), purposive sampling better matched the aims and objectives of the research, thus improving the rigor of the study and the trustworthiness of data and results. It moved away from any random form of sampling and strategies to make sure specific kinds of cases would possibly be included in the final research of the study. It assumed that people hold different and important views about ideas, issues, and questions. Meanwhile, Ames et al. (2019) explained purposive sampling as a kind of sampling used for special situations to select cases with a specific purpose in mind.

Moreover, Nikolopoulou (2022) explained purposive sampling as a non-probability sampling technique that was selected ‘on purpose’ when identifying the individuals, cases, or events that can provide the best information in achieving the study’s objectives. Also, it was common in qualitative research and mixed methods research as it was

particularly useful if needed to find information-rich cases or make the most out of limited resources.

The use of purposive sampling was important to the study because it enabled the researcher to describe the impact of findings thoroughly and gather responses to have more precise results. This sampling focused on specific areas of interest and an in-depth analysis of the characteristics of marginalized sectors.

Furthermore, Creswell (2018, as cited in Staller, 2020) illustrated the purposeful sampling as a selection of people and sites to clearly understand the phenomenon. It developed perspectives and understanding that could be useful in enlightening the cases or situations and describing and unfolding the participants and respondents of the study.

Meanwhile, the study of Palinkas et al. (2015, as cited in De Castro, 2021) explained the wide use of purposeful sampling in qualitative research to identify and select information-rich cases of the phenomenon using limited resources. It highlighted the knowledge and experience of participants to communicate, reflect, and express their opinions.

The study used purposeful sampling to determine the potential impact of livelihood programs on the lives of marginalized sectors. The purposeful sampling was appropriate because it provided recommendations and strategies to the city government of Calamba that could be used when implementing different programs suitable to the needs of marginalized sectors.

Respondents of the Study

For the Quantitative Data, the study utilized a total of 150 respondents as shown in Table A:

Table A

Respondents Profile

Type of Sector	Gender	Age Range	Total
Formal	Male	21-53 years old	18
	Female	19-61 years old	30
Informal	Male	21-57 years old	33
	Female	18-65 years old	69
Total Respondents			150

Of the 150 respondents, 18 males aged 21 to 53 years old and 30 females aged 19 to 61 years old came from the formal sector. Meanwhile, 33 males aged 21 to 57 years old and 69 females aged 18 to 65 years old came from the informal sector.

Participants of the Study

For the Qualitative Data, the researcher utilized 10 participants who received different livelihood programs as shown in Table B.

Of the ten (10) participants; two males aged 40 years old and 66 years old who worked as Farmer and Cooperative President were interviewed. The participants received vegetable seeds, fertilizers, and chicken from the city government. Meanwhile, eight females aged 53 years old, 34 years old, 43 years old, 57 years old, 59 years old, 46 years old, 57 years old, and 49 years old worked as Mushroom Grower/ Sectoral, Farmers, Businesswoman, Cooperative Presidents, Sewer/Mushroom Grower, Housewife, Fisherfolk, and Farmers were interviewed. The participants have received mushrooms, rabbits, pigs, vegetable seeds, rice, farming equipment, sewing machines, broiler production, fingerling, and feeds from the city government.

Table B

Participants Profile

Participants/ Type of sector		Age	Gender	Occupation	Type of livelihood program/s received
Participant Formal	1/	53	Female	Mushroom Grower/ Sectoral	Mushroom Rabbit, Pig,
Participant Informal	2/	34	Female	Farmer	Vegetable seeds
Participant Informal	3/	43	Female	Businesswoman	Rice
Participant Informal	4/	57	Female	Cooperative President	Pig, Farming Equipment, Vegetable seeds, Rabbit
Participant Informal	5/	59	Female	Sewer/Mushroom Grower	Sewing machine, Mushroom
Participant Informal	6/	46	Female	Housewife	Broiler production
Participant Informal	7/	66	Male	Cooperative President	Vegetable seeds, fertilizer, chicken
Participant Informal	8/	57	Female	Fisherfolk	Fingerling, feeds
Participant Informal	9/	40	Male	Farmer	Vegetable seeds, fertilizer
Participant Informal	10/	49	Female	Farmer	Broiler, fertilizer, vegetable seeds

The respondents and participants of this study have ages ranging from twenty-one (21), the youngest, to sixty-six (66), the oldest. There were ninety-nine females (99) and fifty-one (51) males. They have been categorized as marginalized working in formal and informal sectors.

Instrument

The instruments used were validated researcher-made surveys and semi-structured interview questionnaires to gather the data from the marginalized sectors. The questionnaire was drawn out based on the researcher's previous readings of related studies and literature, published articles, and theses relevant to the study. The survey

describing the implication of the implementation of livelihood to the lives of respondents was openly constructed to accommodate the preparedness in answering the questionnaire.

The survey questionnaire had four dimensions. The first indicator was the level of implementation in terms of applicability, sustainability, marketability, and acceptability; the second was the quality of life of marginalized sectors in terms of life satisfaction, affluent life, and rich life aspiration; the third indicator was the significant relationship between the level of implementation of livelihood programs and quality of life, and the fourth indicator was the proposed program based on the result of the study.

The questionnaires were evaluated using the four-point Likert scale of (4) Fully Implemented, (3) Implemented), (2) Partially Implemented, and (1) Not Implemented for the level of implementation and four-point Likert scale of (4) Very Satisfactory, (3) Satisfactory, (2) Fair, and (1) Poor for the quality of life of marginalized sectors.

The researcher also conducted interviews for an in-depth analysis of the study.

As for the semi-structured interview questions, these were:

1. What livelihood program/s of the government do you have access to and are suitable to your needs? Was the quality of life achievable through livelihood programs?
2. How are these livelihood programs implemented?
3. How do these livelihood programs provide opportunities to you and your family?
4. What livelihood strategies you have adopted that improve your lives?
5. How do the skills acquired empower you as an individual?
6. How do the government strategies help you in measuring relevance and timeliness of livelihood programs being implemented?
7. How do these livelihood programs increase your profit in the market?
8. How do these livelihood programs help yourself and your family?
9. What do you aspire/ wish to have in life?

Validation of the Instrument

The survey questionnaires were presented to the thesis adviser, quantitative data analyst/statistician, and panelists for comments and suggestions. Meanwhile, the interview guide questions were presented and validated by the thesis adviser and qualitative data analyst for a thorough understanding of the study. For the development and comprehensive study, some professionals were sought to validate the instrument. These professionals were composed of a research director, statistician, qualitative data analyst, and two (2) supervising administrative officers from the city government of Calamba who used to be implementers of livelihood programs.

Some items in the questionnaires were added and deleted based on the advice of the validators. Furthermore, the interview guide questions for qualitative data were validated by the qualitative data expert and the thesis adviser. Comments and suggestions were incorporated for the development of the study. Upon approval, the

survey questionnaires and interview guide questions were disseminated to marginalized sectors that have access to different livelihood programs in the city.

Meanwhile, the proportion of relevance of S-CVI Average had met the satisfactory level of 1.0. Thus, the scale of questionnaire had achieved the satisfactory level of content validity.

Data Gathering Procedure

In gathering the data, the study applied the following procedures:

First, the list of marginalized sectors was generated in the Gender and Development Management Information System (GADMIS). Implementers were also coordinated to verify the respondents' accessibility to different livelihood programs funded by GAD.

Upon approval of the thesis adviser, the survey questionnaires were prepared to gain information about the marginalized sectors' access to different livelihood programs offered by the city government. The 150 respondents were distributed with printed copies of questionnaires. Results from survey questionnaires were tabulated, consolidated, and interpreted. Google form was also made to input the answers of respondents for easier computation of the result of the survey. Data was submitted to a statistician for interpretation of the result.

Furthermore, interviews were conducted with ten (10) participants to know their experiences on the programs implemented. Interview guide questions in verbatim form were produced for the participants' better understanding. Some interviews were performed through calls, face-to-face, and video calls in Messenger. Follow-up interviews were also conducted to gather and clarify the data provided by the participants. The results of the interviews were transcribed and submitted to the qualitative data analyst for interpretation of data.

Treatment of Quantitative Data

The following statistical treatment was applied using the Likert Scale, frequency, and mean to assess the level of implementation of livelihood programs and quality of life among marginalized sectors. The study used the purpose statements in the level of implementation of livelihood, quality of life among marginalized sectors, significant relationships of implemented livelihood programs and quality of life, and proposed livelihood program.

Moreover, the study conducted a pilot test on twenty (20) respondents and interpreted by an institutional statistician using Cronbach Alpha to measure and assess the reliability and internal consistency of questions. The Cronbach Alpha as explained by Abbadia (2023) evaluated the reliability of variables between many items that comprised an instrument to the quantity of the total variable. Reliability was produced when the same

collection of items would result in the same responses to identical questions when administered to the same respondents.

The Cronbach Alpha result was excellent with values of .978 for applicability, .966 for acceptability, .969 for marketability, and .977 for sustainability in the level of livelihood implementation. The quality of life had values of .975 for life satisfaction, .977 for affluent life, and .978 for rich life aspiration.

Treatment of Qualitative Data

The study interviewed ten (10) participants who agreed to share their experiences regarding the level of implementation of livelihood programs and their quality of life. The interview used Thematic Analysis which had taken the bodies of data (which were often quite large) and groups according to similarities. It was a set of interviews or focus group transcripts that could be useful for finding out about people's experiences, views, and opinions.

The study used thematic analysis of qualitative data in the form of a transcription of in-depth interviews with the marginalized sectors. Data were in audio files or recordings being transcribed in verbatim form. The transcripts were submitted to a qualitative data analyst for the application of codes. The Interpretative Phenomenological Analysis (IPA) was used to focus on the lived experiences of individuals using collated data like interviews, analyzed and uncovered themes and their meanings, and helped the researcher understand individuals' experiences. It transformed into the charged experiences that often 'mark' or leave a lasting impact on people's lives. The study by Braun and Clarke (2006, as cited in Tarcilo, 2022), explained the IPA procedures that had undergone different systematic phases. Phase 1, referred to the familiarization of collected data; Phase 2, was about generating or combining different codes; Phase 3, searching for appropriate themes; Phase 4, was about reviewing themes; and Phase 5, was about clustering the defined themes. Various codes were combined and made into sub-themes. Some themes were removed, merged, and re-arranged to support the data. From the responses of marginalized sectors and formulation of sub-themes, the result of the study was analyzed, narrated with coherent stories based on the presented data, and supported with previous studies and literature related to the present study.

RESULTS

Purpose Statement 1. Determine the level of implementation of different livelihood programs offered by the City Government of Calamba to marginalized sectors in terms of:

1.1 Applicability

Table 1.1
Level of Implementation of Different Livelihood Programs Offered by the City Government of Calamba to Marginalized Sectors in terms of Applicability

Indicators	Employees		Customers		Composite	
The implementation of livelihood programs …	X	VI	X	VI	X	VI
1. Are suitable to the needs of marginalized sectors	3.21	I	3.20	I	3.21	I
2. Provides sufficient technical and financial support for effective livelihood programs to marginalized sectors	3.21	I	3.21	I	3.21	I
3. Strengthens awareness and skills of marginalized sectors through appropriate training	3.15	I	3.19	I	3.17	I
4. Influences the decision-making of marginalized sectors in accessing the livelihood programs	3.13	I	3.16	I	3.15	I
5. Benefits predominantly the marginalized sectors who receive the livelihood programs	3.08	I	3.19	I	3.14	I
Standard Deviation					0.80	
General Assessment	3.15	I	3.19	I	3.17	I

Legend: 3.25 - 4.00 Fully Implemented (HI) 2.50 - 3.24 Implemented (I) 1.75 - 2.49 Partially Implemented (MI) 1.00 - 1.74 Not Implemented (NI)

1.2 Acceptability

Table 1.2
Level of Implementation of Different Livelihood Programs Offered by the City Government of Calamba to Marginalized Sectors in terms of Acceptability

Indicators	Employees		Customers		Composite	
The implementation of livelihood programs …	X	VI	X	VI	X	VI
1. Are compatible to the marginalized sectors' skills and knowledge	3.13	I	3.19	I	3.16	I
2. Improve opportunity for marginalized sectors through access to skills training on enterprise development	3.13	I	3.24	I	3.19	I
3. Enable the marginalized sectors to adapt different livelihood strategies	3.29	FI	3.20	I	3.25	FI
4. Empowers marginalized sectors to improve livelihood program through the new skills acquired	3.23	I	3.25	FI	3.24	I
5. Facilitate the active participation of marginalized sectors in livelihood strategies for development intervention	3.21	I	3.25	I	3.23	I
Standard Deviation					0.75	
General Assessment	3.20	I	3.22	I	3.21	I

Legend: 3.25 - 4.00 Fully Implemented (HI) 2.50 - 3.24 Implemented (I) 1.75 - 2.49 Partially Implemented (MI) 1.00 - 1.74 Not Implemented (NI)

1.3 Marketability

Table 1.3
Level of Implementation of Different Livelihood Programs Offered by the City Government of Calamba to Marginalized Sectors in terms of Marketability

Indicators	Employees		Customers		Composite	
The implementation of livelihood programs …	X	VI	X	VI	X	VI
1. Create platform for easy access to market and promotion of goods and services	3.21	I	3.11	I	3.16	I
2. Demonstrate citizen-centric marketing focusing the real needs of marginalized sectors	3.13	I	3.15	I	3.14	I
3. Observe aims that are specific, measurable, attainable, relevant, and timely (SMART) livelihood programs and strategies for marginalized sectors	3.04	I	3.16	I	3.10	I
4. Identify clearly the ideal target beneficiaries of the program and draws the marginalized sectors' attention to goods and services available	3.17	I	3.22	I	3.20	I
5. Determine the value of services provided and fulfills the marginalized sectors' needs or desires through profit, market opportunity, environmental, legal and performance expectations and standards	3.13	I	3.20	I	3.17	I
Standard Deviation					0.79	
General Assessment	3.13	I	3.16	I	3.15	I

Legend: 3.25 - 4.00 Fully Implemented (HI) 2.50 - 3.24 Implemented (I) 1.75 - 2.49 Partially Implemented (MI) 1.00 - 1.74 Not Implemented (NI)

1.4 Sustainability

Table 1.4
Level of Implementation of Different Livelihood Programs Offered by the City Government of Calamba to Marginalized Sectors in terms of Sustainability

Indicators	Employees		Customers		Composite	
The implementation of livelihood programs …	X	VI	X	VI	X	VI
1. Gain viable profits and provide for marginalized sectors' family in the long run	3.21	I	3.19	I	3.20	I
2. Generate employment or income among marginalized sectors into sustainable livelihoods towards economic stability	3.17	I	3.23	I	3.20	I
3. Create enabling environment through establishment and strengthening of networks of implementing social safety net services, providers of working capital, and participants from marginalized sectors	3.21	I	3.17	I	3.19	I
4. Raise living standards and alleviate poverty of marginalized sectors	3.15	I	3.14	I	3.15	I
5. Enable a continuous improvement of the marginalized sectors' quality of life	3.10	I	3.18	I	3.14	I

Standard Deviation					0.79	
General Assessment	3.17	I	3.18	I	3.18	I

Legend: 3.25 - 4.00 Fully Implemented (HI) 2.50 - 3.24 Implemented (I) 1.75 - 2.49 Partially Implemented (MI) 1.00 - 1.74 Not Implemented (NI)

Purpose Statement 2. Determine the quality of life among marginalized sectors in terms of:

2.1 Life Satisfaction

Table 2.1
Level of Quality of Life among Marginalized Sectors in terms of Life Satisfaction

Indicators	Employees		Customers		Composite	
…	X	VI	X	VI	X	VI
1. Manifest satisfaction in preparing daily activities	3.23	S	3.14	S	3.19	S
2. Give themselves the feeling of self-respect and self-worth in every endeavor	3.19	S	3.17	S	3.18	S
3. Ensure good sleep, capacity for work, and personal relationships	3.27	VS	3.22	S	3.25	VS
4. Meet enough relaxation and leisure with positive psychological outlook and emotional well-being	3.17	S	3.21	S	3.19	S
5. Demonstrate good physical and mental health ability to do the things he/she wants to do	3.23	S	3.22	S	3.23	S
Standard Deviation					0.73	
General Assessment	3.22	S	3.19	S	3.21	S

Legend: 3.25 - 4.00 Very Satisfactory (VS) 2.50 - 3.24 Satisfactory (S) 1.75 - 2.49 Fair (F) 1.00 - 1.74 Poor (P)

2.2 Affluent Life

Table 2.2
Level of Quality of Life among Marginalized Sectors in terms of Affluent Life

Indicators	Employees		Customers		Composite	
…	X	VI	X	VI	X	VI
1. Meet life stability, comfort, enjoyment, and pleasantness	3.19	S	3.25	VS	3.22	S
2. Experience financial freedom, excellent health care services, good facilities, infrastructure, and school	3.21	S	3.20	S	3.21	S
3. Participate in social activities or gatherings and recreation	3.13	S	3.12	S	3.13	S
4. Live in a successful career and acquire luxuries goods	3.10	S	3.07	S	3.09	S
5. Donate to charity or does volunteer works	3.10	S	2.95	S	3.03	S
Standard Deviation					0.81	
General Assessment	3.15	S	3.12	S	3.14	S

Legend: 3.25 - 4.00 Very Satisfactory (VS) 2.50 - 3.24 Satisfactory (S) 1.75 - 2.49 Fair (F) 1.00 - 1.74 Poor (P)

2.3 Rich Life Aspiration

Table 2.3
Level of Quality of Life among Marginalized Sectors in terms of Rich Life Aspiration

Indicators	Employees		Customers		Composite	
…	X	VI	X	VI	X	VI
1. Seek for novel experiences like travel, literature, film, music, sports, and arts	3.13	S	3.05	S	3.09	S
2. Plan for unusual and perspective-changing experiences, such as living abroad for an extended period of time	3.10	S	3.02	S	3.06	S
3. Pay off debt and starts prioritizing saving goals and investment	3.17	S	3.22	S	3.20	S
4. Desire a meaningful life by living in a stable economic and political conditions of stability and happy life	3.27	VS	3.36	VS	3.32	VS
5. Pursue money or power by creating multiple streams of incomes	3.40	VS	3.30	VS	3.35	VS
Standard Deviation					0.78	
General Assessment	3.21	S	3.19	S	3.20	S

Legend: 3.25 - 4.00 Very Satisfactory (VS) 2.50 - 3.24 Satisfactory (S) 1.75 - 2.49 Fair (F) 1.00 - 1.74 Poor (P)

Purpose Statement 3. Determine if there was a significant relationship between the level of implementation of livelihood programs and the level of quality of life among marginalized sectors in Calamba City.

Table 3
Test of Significant Relationship between Level of Implementation of Livelihood Programs and Level of Quality of Life among Marginalized Sectors in Calamba City

Level of Implementation	Quality of Life	r value	p value	Remarks	Decision
Applicability	Life Satisfaction	.758**	0.000	Significant	Reject Ho
	Affluent Life	.735**	0.000	Significant	Reject Ho
	Rich Life Aspiration	.727**	0.000	Significant	Reject Ho
Acceptability	Life Satisfaction	.707**	0.000	Significant	Reject Ho
	Affluent Life	.691**	0.000	Significant	Reject Ho
	Rich Life Aspiration	.696**	0.000	Significant	Reject Ho
Marketability	Life Satisfaction	.721**	0.000	Significant	Reject Ho
	Affluent Life	.699**	0.000	Significant	Reject Ho
	Rich Life Aspiration	.742**	0.000	Significant	Reject Ho
Sustainability	Life Satisfaction	.704**	0.000	Significant	Reject Ho
	Affluent Life	.672**	0.000	Significant	Reject Ho
	Rich Life Aspiration	.748**	0.000	Significant	Reject Ho

*. Correlation is significant at the 0.05 level **. Correlation is significant at the 0.01 level (2-tailed

Purpose Statement 4. Describe the lived experiences of the participants from the marginalized sectors on to the implementation of livelihood programs and their quality of life.

Interview Question 1: What livelihood program/s of the government do you have access to and are suitable to your needs?

THEME A: Farming, Poultry, and Fishing Government Initiated Programs		
PARTICIPANT	**RESPONSES**	**SUBTHEMES**
Participant 1	Pero ang pinaka ano po namin ngayon ay yung sa mushroom.	Mushroom Cultivation
Participant 2	Unang natanggap namin ay sisiw…kaya nga lang di sya nagsuccess gawa ng panahon. Ang pangalawa ay ang mushroom…ahm…tinanggap namin to galing sa gobyerno.	
Participant 3	… buto.	Farm Fertilizers and Farm Seeds
Participant 4	… seeds, fertilizer.	
Participant 5	… abono, mga buto po.	
Participant 6	… buto, fertilizer at gamot.	
Participant 7	For example, pecking duck, mga ganyan…and then yung mga chicken na palahiin, so yun. Kasama yun…part yun ng naattendan naming seminar and then nareceive namin yung broiler management…yung sisiw nga.	Chicken and Duck Poultry
Participant 8	Pati na rin training sa pag-aalaga ng mga hayupan… mga manok na paitlogin..	
Participant 9	Ang naibigay po saamin ay fingerling sa hito na may kasamang feeds. Sa asawa ko po yun. Katulad yan yung mga maghihito nabigyan ng fingerling. Identified ng government kung sino maghihito.	Fish Farming
Participant 10	Rice subsidy.	Rice Subsidy

Interview Question 2: How are these livelihood programs implemented?

THEME B: Government Initiatives		
PARTICIPANT	**RESPONSES**	**SUBTHEMES**
Participant 1	At pinalalaganap na po namin ito sa bawat barangay at tinatie-up na din po ito sa bawat school. Bale po sa ngayon isa din po ako sa nag ano ng..inaayos na po namin para sa Division ng DepEd	Local Government Initiatives
Participant 2	una yan inaanyayahan ka ng government…kung ikaw ay willing umattend ng seminars.	

Participant 10	Bale ang nangyari…syempre may proseso yan, interview muna kung talagang ako ay karapat-dapat. Kasi meron mga taong walang kakayahan…kailangan talagang i-evaluate. So since nakita talaga na kailangan naman talaga ng mga kabuhayan dahil meron akong tatlong anak na nag-aaral at walang may hanapbuhay sa aming pamilya, ako ang naging kuwalipikado. Yun ang pinagpasimulan ko para ako magkaroon ng hanapbuhay.	
Participant 4	Nakikipagpartner si CLDD. Meron syang project kagaya ng rabbit production…so partnership with Department of Agriculture and CLDO with Sir Philip. So, pag nagseminar ka, meron kang trio…so ang nagbabayad doon ay CLDO tapos binibigay doon sa mga sineminar.	
Participant 8	Pag ibinigay ang intervention, livelihood program ng LGU o di kaya ay national government Department of Agriculture, ipinamamahagi naman namin sa mga miyembro.	
Participant 9	Katulad yan yung mga maghihito nabigyan ng fingerling. Identified ng government kung sino maghihito.	
Participant 5	Nilalakad po ng pinaka President po sa Cityhall bago pinamamahagi po sa mga Samahan dito.	
Participant 3	Kasi nga po cooperative at eco-farm…tas sa farm po.	Thru Livelihood Cooperative and Association
Participant 6	Ano naman kasi kami association.	
Participant 7	Pinatutupad nila ito sa pamamagitan ng…yun nga pagcommunicate sa iba't-ibang uri ng mga kababaihan, for example. And then through seminars din. Pag nakaattend ka po ng seminar regarding po dito. Yun yung nagstart ang implementation nila.	Thru Livelihood Seminars

Question 3: How do these livelihood programs provide opportunities to you and your family?

THEME C: Income and Agricultural Materials		
PARTICIPANT	**RESPONSES**	**SUBTHEMES**
Participant 1	Nagkaroon po ako ng extra income..	Extra Source of Income
Participant 10	Kasi yung livelihood program na ipinagkaloob sa akin, that time lahat ng anak ko nag-aaral…so kailangan ko umisip kung saan ako kukuha ng pangaraw-araw naming pagkain, pambaon nila araw-araw. Alam ko na…na meron na akong pagkukuhanan. Nasa goal mo yan kung gusto mom aging maunlad ang Negosyo mo syempre pagbubutihin para yung kita mo…yung pangangailangan ng pamilya mo, matustusan mo.	
Participant 4	Pag binigyan mo sila ng livelihood, meron silang pagkakakitaan. Meron silang back-up.	
Participant 2	Ibibigay nila sayo, ang gagawin mo nalang pangalagaan mo sya at paunlarin mo kung ano ang ibinigay sayo.	
Participant 7	Syempre mag-aalaga ka ng sisiw…may costing, and then diba makakapagbenta ka. Yun yung kapakinabangan eh. Dun mo makikita ang kapakinabangan dahil dun kikita ka doon sa uri ng livelihood.	

Participant 8	Nakakatulong yan ng malaki. Unang-una nagkakanegosyo ka ng walang puhunan. Minsan nga ang bigay ng LGU meron pang kuwan…may initial na patuka pa pag sa manok, sa baboy gayon din.	
Participant 9	Malaking tulong yun samin dahil binigyan kami ng paunang yan para palaguin namin. Dyan po kami magsimula. Kung meron naman po kami ng dati, dagdag sa kabuhayan po.	
Participant 6	Nakakatulong sya samin kasi pang extrang income saming mga farmers.	
Participant 3	Sa kooperatiba po. Kapag po kasi kami binigyan ng seeds, nagbibigay din po kami sa mga members na farmers. Diba po nagfafarming po kami…may sarili po kaming farm. Ginagamit po namin ang seeds pag itatanim po namin. Pinagbibili po namin tas sa family na po namin kasi yung seeds po na binigay sa kooperatiba tas binigyan po ng kooperatiba ang member nya na farmer, bigay na po yun ng kooperatiba. Kasi di naman po lahat magagamit kaya sinishare din po sa members.	Aide for Farmers
Participant 5	Okay naman po kasi…laking tulong na po yun kasi hindi na kami bibili tulad ng mga abono tsaka po mga buto. Kumbaga laking tulong na po yun kasi po sa taas po ng abono tsaka po mga buto. Mahal po kasi.	

Question 4: What livelihood strategies have you adopted that improve your lives?

THEME D: Assistance, Expansion, and Adjustment Strategies		
PARTICIPANT	**RESPONSES**	**SUBTHEMES**
Participant 8	Katulad sa agrikultura…sa agrikultura kasi may mga trainings ang pagtatanim. Although marunong na naman sila na magtanim, ay yun ay sinusupplement pa ng mga pag-aaral at trainings na binibigay samin ng LGU tsaka national government.	Assistance Strategy thru training and seminars
Participant 9	Halimbawa po pag may seminar na ibinigay, kung mapasama man po sila sa seminar sila po ang umaattend kasi sila nag-aalaga sa hito. Kami naman meron din naman kaming baklad. Syempre pag po ba…pag may alam ka sa pag aalaga mas maganda po diba ma'am…mapapaunlad nyo pa yung pag-aalga, mapaparami. At syempre kung alam namin ang pag-aalaga halimbawa magkasakit ang mga hito paano gagawin. Syempre pagka may seminar, alam mo ang gagawain. Hindi ka matatakot na malugi ka.	
Participant 6	Malaking naitutulong sakin ang mga trainings.	
Participant 2	Pero napakalaking tulong kasi yun nga bawat bigay ng government pangalagaan mo kung anong meron ka para nagagamit mo habang nabubuhay ka. Yung mga strategies na natutunan ko dyan, dapat may pasensya ka, diba. Bawat ginagawa mo kailangan may pasensya ka. Sa pasensya mo dun ka magbubunga…kasi dun mo makikita yung pinagpasensyahan mo na ginagawa mo. Kasi kung wala kang pasensya at naiinis ka na…ano ba yan ayaw magbunga…ano ba yan nabulok, ganun natutunan ko…dapat may pasensya ka sa lahat ng ginagawa mo. At tsaka dapat masaya ka sa ginagawa mo.	Adjustment Strategy thru Hard work and Perseverance

Participant 7	Unang-una, kailangan ng sipag at pagtatyaga…yun yung unang-una na mai-aim mo sa…na para sa sarili mo. Kasi lahat naman ng bagay mahirap gawin so kailangan talaga ng dobleng sipag, dobleng pagtatyaga doon sa uri ng livelihood na gaganapin mo.	
Participant 10	…kapag pala ikaw may pangkabuhayan matututo kang makisama, magmanage…maliit man o malaki na business, matututo kang magmanage ng negosyo para maging maunlad, para mamonitor mo kung kumikita ka o hindi. Kung kailangan mo ba ng plan B mo para hindi mawala ang hanapbuhay na ipinagkaloob sayo. Para patuloy ang kita mo.	Expansion Strategy thru income creation, networking, and marketing
Participant 4	Next yung marketing naman. And hopefully magkaroon kami dito ng establishments, yung maluwang namin na lugar na yan is…paupahan namin sa mga gustong magtayo ng mga kainan.	
Participant 3	May napunta po dito nag-oonline po…kumukuha po sila dito. Nagpapaorder po sila…	
Participant 1	..nagkaroon po kami ng extra income na makakatulong din po doon sa pagbabayad ng bills kasi po bawat gumagawa kami at nagti-train, kahit papaano may binibigay po silang honorarium at isa na rin po ako sa nagmamarket. Kahit papaano may percentage po kami.	
Participant 5	Bale po yung mga binubunga po ng amin pong tinatanim na galing po sa amin, ako na po ang nagtitinda. Ako na po yung nagdadala sa Tanauan, sa kalakalan po. Laking tulong na rin po sa amin yung kinikita as in directa na po saamin.	

Question 5: How do the skills acquired empower you as an individual?

THEME E: By Gaining Additional Knowledge and Skills		
PARTICIPANT	**RESPONSES**	**SUBTHEMES**
Participant 6	Malaking naitutulong sakin ang mga trainings.	Knowledgeable and Skilled thru Livelihood Training and Seminar
Participant 10	…dapat maging matalino ka rin para ang Negosyo mo hindi mawala. Natuto akong magkilatis ng tao pati yung pagiging business-minded ako. Naging business-minded ako na naging resourceful pala ako, kahit maliit man, talagang naging resourceful ako. At tsaka although kahit sa maliit na puhunan, nasa sayon a din talaga ang pagpapalago…basta meron kanang pinagpasimulan na at kaya mong imanage, doon ka matututo eh kung gusto mo na hindi mawala.	
Participant 7	So, yung livelihood nakatulong para sakin kasi…ah…nagawa ko kasi yun base sa mga natutunan ko, base dun sa mga…mga yun nga learnings dun sa mga tinatawag natin…kasi ginawa mo, ginanap mo sya sa buhay mo. Inadopt mo eh. So, syempre, malaki ang natutunan ko, unang-una na syempre sap ag-aalaga nito…pag aalaga at pagmamanage.	
Participant 8	Sa pamamagitan ng pagsasanay, nadadagdagan ang aming kaalaman. Noong una konti lang ang kaalaman namin sap ag-aalaga ng baboy tsaka manok…ngayon alam na alam na namin. At sa pagtatanim man, ganun din naman.	

Participant 5	Malaking tulong po talaga. Kasi po yung inaapply po sa amin ng government na ibinabahagi nila…na…naibabahagi naman po sa pagtatanim.	
Participant 4	So, nabibigyan namin sila ng assurance na may credibility kami at hindi lang kami basta nakiki-agri lang kasi equip kami with knowledge, equip kami with certification, legality. Natrain ako para maging equip sa field na to at para makapagturo sa iba. Sinishare ko ang alam ko.	
Participant 2	Kasi pag hindi ka interesado, hindi mo magagawa. Yung skills ah…ah…nasa sarili mo rin yan. Kapag interesado ka, umattend ka ng seminar, magagawa mo lahat yun.	
Participant 9	Paraan ng pag-aalaga po ng mga hito. Kaya yun po ang lagi naming hinihingi na dumami pa ang mga seminar na aattendan kung paano po namin matututunan ang ganoong paraan at para lalong gumanda ang pag-aalaga.	
Participant 3	Natututo po magbenta, paano magtanim, itanim.	
Participant 1	Inumpisahan po namin sa aming barangay dito sa Canlubang. At unti-unti din namin po itong pinapakilala sa iba't-ibang barangay na ngayon. Kaya po ngayon sa buong Calamba ay nakikilala na rin po ang mushroom…at syempre po una po doon, pag pinag-uusapan ang mushroom lalo na sa akin, una agad nila akong pinipin-point na dito po kasi…sa ngayon po gumagawa na po kami…nagbubuo po kami ng Calamba mushroom growers ng Calamba.	Breakthrough of the Mushroom Farming

Question 6: How do the government strategies help you in measuring relevance and timeliness of livelihood programs being implemented?

THEME F: Availability, Reliability, and Technical Efficiency		
PARTICIPANT	**RESPONSES**	**SUBTHEMES**
Participant 3	Natututo na, diba bawat seeds may iba't-ibang klase. May iba't ibang buwan kung kelan puwedeng itanim. Napag-aaralan, natututunan. Diba pag tag-ulan, may halaman na tag-ulan…	Applying the Acquired Knowledge and Skills thru Availability of Training and Seminars
Participant 4	Nagkakaroon ka ng bagong idea, kabuhayan…nagkakameron ka ng perseverance na mag-isip pa ng mga pupuwede mong gawin. Pero pagdating sa idea, nagkakaroon kami ng bagong ideya.	
Participant 7	So ngayon, para sa akin malaking tulong yung kanilang strategy na naiisip na yan kasi yung mga kagaya namin na individual natututo at the same time nakikinabang. Kumbaga yung mga programa ng gobyerno ay naibababa nila sa bawat indibidwal dito sa mga Calambeno. Masasabi kong maganda yung strategy na naisip nila na yung mga ganitong uri ng livelihood ay nare-reach out nila lalo na yung mga tao na nasa mga laylayan.	
Participant 8	Unang-una tinatanong nila kung sino ba ang mga interesado…mga prospective na magiging participant. Syempre yung mga participant ay interesado, may pagmamalasakit sa pagsasaka at livelihood. Kasi buhay na nila yan eh. At kapag nalaman ng gobyerno natin magse-set sila ng training, magcoconduct at ibibgay naman nila saamin.	

Participant 5	Inaapply namin po kung paano at kelan aanihin yung gulay.	
Participant 10	Kumbaga yung isip ko na-open, nabukasan sa ganyang larangan na ang pagbubusiness, maliit man o malaki, talagang ano ka, kailangan mong maging ano sa Negosyo…matalino para hindi mawala yung binigay sayo.	Technical Efficiency to Business Opportunities
Participant 6	Tuloy-tuloy naman ang kita nila.	
Participant 2	Nakatulong itong binibigay ng government, unang-una kasi biyuda ako. Syempre kapag biyuda ka, ang hanap mo, hanapbuhay talaga. Mapagkakakitaan para maitaguyod ang mga anak mo lalong-lalo na nung ang mga anak ko ay nagco-college. Malaking tulong sya kasi pandagdag kahit pamasahe. Kahit na walang meryenda basta may pamasahe sila. Yun ang malaking tulong na naibigay saakin.	Reliability to Government Support and Initiative
Participant 9	Malaking tulong po sa amin dahil nabigyan kami ng pagkakataon na mabigyan kami ng libreng fingerlings na para din saaming kabuhayan para sa aming mga anak. Kaya dapat lang po talaga, nagbigay ang gobyerno dapat pangalagaan tlaga. …	
Participant 1	Ma'am, bale ang sa government namin ngayon very supportive lalo na po yung DA. Pag nagti-training po sila under ng sa mga gardening…bale sinasama po nila ang mushroom. At ang government ay nagsusupply naman po sila ng pangangailangan, kumbaga starter kit sa mga taong nag-aral ng training. At least meron po silang maumpisahan para po sa pangkabuhayan nila.	

Question 7: How do these livelihood programs increase your profit in the market?

THEME G: Marketing and Financial Strategies		
PARTICIPANT	**RESPONSES**	**SUBTHEMES**
Participant 4	Online marketing. Meron kami through ATI naman. So, tinuruan naman kami ng digital marketing pero syempre hindi naman ganun kalaki yung…more on kasi ito ng eco-farm. Eco-tourism farm. So, ang amin is a little of everything. Yung ano namin dito ay hindi talaga yung maximize farming o commercial farming.	Online Marketing
Participant 3	Sa pamamagitan ng harvest time, benebenta at ang iba pa pong mga kasamahan ay benebenta online.	
Participant 2	Yung mga pangkabuhayan para makatulong sa sarili mo na mapataas yun, kailangan sipag at tiyaga. Pag wala kang sipag at tiyaga, hindi mo mapapataas ang iyong antas ng pangkabuhayan. Kahit anong laki ng puhunan, kapag ikaw ay tamad, wala diba.	
Participant 9	Ngayon, maganda ang benta mo, yun ay para sa pamilya mo na tapos madadagdagan halimbawa ang binigay sayo ay limang libo o tatlong libong similya, pag napaganda mo o napalaki mo ng ayos yun…nakaani ka ng maganda, sa susunod na aalagaan o, madadagdagan nay un.	Profit Gain
Participant 7	Karagdagan lang kasi yang kita…So malaking bagay kasi additional sya. For example ito nga pong pag-aalaga ng sisiw, syempre may karagdagang kita dito eh…	

Participant 10	May notebook kasi ako na sulatan, syempre may presyo yun na may tubo na tayo…hindi man mahal pero kikita tayo kasi pag sobrang mahal hindi tatangkilikin ng tao. Kung ang tubo mo naman ay hindi kalakihan pero mauubos din agad edi maganda ang pasok ng income sayo. Konti man pero mabilis ang benta.	
Participant 8	Talagang nakakatulong yan neng. Noon walang intervention katulad ng pagbibigay ng abono, mga trainings. Siguro meron mga livelihood noon pero very minimal lang. Hindi katulad ngayon na parang full blast na sya at lahat ng barangay ay nabibigyan.	Intensified Implementation of Livelihood Trainings
Participant 6	Dagdag pang kaalaman.	
Participant 1	Sa ngayon po, maganda naman ang naging impact. Isa na rin po ito sa nagiging…first na pangkabuhayan dito sa Calamba-ang mushroom.	Unique Products
Participant 5	Sa merkado po hindi po yun katulad ng idadaan pa sa iba. Kaya yung price po nya nami-maintain po namin. Kaya malaking tulong po yung direkta na naidadala.	Product Pricing

Question 8: How do these livelihood programs help yourself and your family?

THEME H: Personal and Financial Development		
PARTICIPANT	**RESPONSES**	**SUBTHEMES**
Participant 3	Karagdagan lang kasi yang kita…So malaking bagay kasi additional sya. For example ito nga pong pag-aalaga ng sisiw, syempre may karagdagang kita dito eh…	Financial Aid for Education Expenses
Participant 10	Maliit man ang kinikita pero andun pa din ang puhunan ko…dun palang din alam kong may kikitain ako. Araw-araw na panggastos ng mga anak ko. Di naman puwedeng ang bata papasok sa school…Yun yung priority ko, at least kahit papaano ang baon nila doon na.	
Participant 2	Yung pinakatubo ang gawin mo wag mong kunin lahat, magtira ka rin para sa kapital para umunlad ng umunlad yung binigay sayo ng government na pangkabuhayan.. maipagmamalaki ko kahit ako ay biyuda, nakapagtapos ang lima kong anak ng kanilang piniling kurso.	
Participant 9	Siguro po yung maitawid namin yung pang araw-araw namin at mapag-aral ko ang mga anak ko gamit ang pangkabuhayan na naibigay samin.	
Participant 7	So ngayon ang masasabi ko lang dun na ang tagumpay eh yun nga nagkaroon ako ng additional income sa pamamagitan nito	Financial Gain
Participant 8	Unang-una, pag nakita kami nakita din ang miyembro. Nagkakaroon kami ng mga dibidendo.	
Participant 5	Sa loob po ng isang araw nakakapag-ipon…nakakapagtabi pa naman kahit papapano ng kaunting kita. Bukod po sa panggastos sa pang araw-araw Ay yung ito naman, nakakapag-ipon kami na naidadagdag namin…tulad ng nakapagpagawa po kami ng bahay. Tulong na rin po kaming mag-asawa bukod po sa kinikita sa gulay at sa pagtitinda, yun nakakaipon kami. Unti-unti namin napapagawa itong bahay.	
Participant 6	Naging maayos naman ang aming buhay.	

Participant 4	Kaya yung kita ko sa pagtatanim, isisave ko yun para yung expenses sa bahay at sa farm. Yung…yung income na yun nagagamit nila para sa mga pangangailangan sa bahay nila at sa farm. nakakatulong para mapaunlad ang kanilang pamumuhay pagdating sa farming	Improvement of Life
Participant 1	Noong una po dahil isa lang akong plain housewife, hindi po ako nakikisalamuha. Dahil po sa mga programa, nakishare po ako sa mga livelihood programs, unti-unti ko po nadevelop ang sarili ko	Personal Growth and Development

Question 9: What do you aspire/ wish to have in life?

THEME I: Sustainability of Livelihood Program and Children's Education		
PARTICIPANT	**RESPONSES**	**SUBTHEMES**
Participant 1	Unang-una ma'am syempre, hindi ko naman masasabi na habang panahon nandito ako. Ang inaano ko lang ma'am, lahat ng naturuan ko sana maging successful din sila at marating din po nila kung ano man ang narating ko ngayon. At sana naman po, ipapasa din po nila sa susunod na henerasyon at maging pakinabang din po sa susunod na kabataan.	To Pass on and Continue the Livelihood Programs to Future Generations
Participant 4	Yung matrain ang mga katulad nyo na kabataan, ma-equip kayo sa knowledge…iba kasi utak ng kabataan, para sila na magtutuloy. At mamotivate din kayo na hindi puwedeng mawala ang farmers.	
Participant 2	Alam mo ang pinapangarap ko…sana ang tao matuto kung ano ang binigay ng gobyerno sayo. Sana yung mga taong binigyan ng livelihood, paunlarin nila, mahalin nila…kung ano ang binigay sa kanila ng government. Kasi minsan lang yan sa buhay eh. Hindi ka puwedeng umulit. Wag mong sayangin ang bawat biyayang ibinibigay sayo ng government.	
Participant 8	Dapat kahit hindi yung matatanda ngayon…dapat mamulat ang mga kabataan sa livelihood program na sinasabi. At sana magtuloy-tuloy na yang livelihood program na yan. Hindi naman masama yan, bagkus nakakabuti sa isang tao, isang pamilya na magkaroon ng livelihood activities.	
Participant 3	Sana kahit ganito ang kabuhayan namin…sana makatapos ng pag-aaral ang aking mga anak.	Wishing for their Children to Finish Studies
Participant 10	Sana magkaroon pa ako ng extension kahit magkaroon sa ibang purok naman. Pag ako pinagkalooban ulit ng livelihood, magkakaroon ako ng expansion sa iba pang barangay.	
Participant 7	Wala ako masyadong winiwish. Ang gusto ko lang talaga makatapos ng pag-aaral ang mga anak ko. Yun lang.	
Participant 9	Sana tuloy tuloy itong ibinigay saamin na livelihood. Tsaka po sana yung mga anak ko mapagtapos ko kahit ito lang po ang hanapbuhay namin.	
Participant 5	Yung matapos ko tong bahay ko. Sana, kumita kami ng maganda talaga…as in talaga. Para maipatuloy na namin pagpapagawa nitong bahay. Kasi pagkumita ng maayos, makakapag-ipon.	
Participant 6	Simpleng buhay lang tsaka makatapos ang mga anak ko ng sa ganun may maganda silang kinabukasan.	

DISCUSSION

Purpose Statement 1. Determine the level of implementation of different livelihood programs offered by the City Government of Calamba to marginalized sectors in terms of:

Applicability was **Implemented (**3.17, σ - .80) in the different livelihood programs offered by the City Government of Calamba to marginalized sectors. The indicator "Are suitable to the needs of marginalized sectors and provides sufficient technical and financial support for effective livelihood programs" had the highest composite mean of **3.21** interpreted as **Implemented.** On the other hand, the indicator "Benefits predominantly the marginalized sectors who receive the livelihood programs" yielded the lowest composite mean of 3.14 and interpreted as **Implemented.**

This implies that marginalized sectors are mostly concerned with how the suitability, and sufficient technical, and financial support influence the effectiveness of livelihood programs. All indicators that involved appropriate support for the needs of marginalized sectors affect the implementation of the government's livelihood programs, thus, supporting them to establish and build relationships that can reach those who have been excluded. However, disengaging them when it comes to access to livelihood programs will fail the government's efforts to tailor their real needs.

Acceptability was **Implemented** (**3.21, σ-0.75**) in different livelihood programs offered by the City Government of Calamba to marginalized sectors. The indicator "Enable the marginalized sectors to adapt different livelihood strategies" had the highest composite mean of **3.25** interpreted as **Fully Implemented.** On the other hand, the indicator "Are compatible to the marginalized sectors' skills and knowledge" yielded the lowest composite mean of 3.16 interpreted as **Implemented.**

This implies marginalized sectors' abilities to adapt to different strategies provide a basis for formulating policy recommendations that would be responsive to their needs effectively. However, their skills and knowledge of programs greatly influence allowing them to stand on their own and become financially stable.

Marketability was **Implemented (**3.15, σ- 0.79) in different livelihood programs offered by the City Government of Calamba to marginalized sectors. The indicator "Identify clearly the ideal target beneficiaries of the program and draws the marginalized sectors' attention to goods and services available" had the highest composite mean of **3.20** interpreted as **Implemented.** On the other hand, the indicator "Observe aims that are specific, measurable, attainable, relevant, and timely (SMART) livelihood programs and strategies for marginalized sectors" yielded the lowest composite assessment of **3.10** interpreted as **Implemented.**

This implies that the goods and services available draw the marginalized sectors' attention. Identifying clearly who are the target beneficiaries of livelihood programs and

drawing the goods and services available for them help in ensuring relevance to improve marginalized sectors' livelihoods. And for some instances, though programs are formulated, and the beneficiaries are identified, the SMART goals of progress and ideas are not easy to reach and/or achieve.

Sustainability was **Implemented (**3.18, σ-0.79) in the different livelihood programs offered by the City Government of Calamba to marginalized sectors. The indicator "Gain viable profits and provide for marginalized sectors' family in the long run and Generate employment or income among marginalized sectors into sustainable livelihoods towards economic stability" had the highest composite mean of **3.20** interpreted as **Implemented.** On the other hand, the indicator "Enable a continuous improvement of the marginalized sectors' quality of life" yielded the lowest composite mean of **3.10** interpreted as **Implemented.**

This implies that marginalized sectors are mostly concerned with the profits, employment, and income provide economic stability for the marginalized sectors in the long run. These factors allowed the marginalized sectors to sustain their needs continuously; but did not compromise the happiness and comfort they experienced.

Purpose Statement 2. Determine the quality of life among marginalized sectors in terms of:

Life Satisfaction was **Satisfactory** (3.21, σ- 0.73) among marginalized sectors. The indicator "Ensure good sleep, capacity for work, and personal relationships" had the highest composite mean of 3.25 interpreted as Very Satisfactory. On the other hand, the indicator "Give themselves the feeling of self-respect and self-worth in every endeavor" yielded the lowest composite mean of 3.18 interpreted as Satisfactory.

It implies that marginalized sectors are mostly concerned with their good sleep, capacity for work, and personal relationships. These indicators greatly influence the performances of marginalized sectors; thus, self-respect and self-worth help them work through challenges, build resilience, and maintain their emotional health.

Affluent Life was **Satisfactory** (3.14, σ-0.81) among marginalized sectors. The indicator "Meet life stability, comfort, enjoyment, and pleasantness" had the highest composite assessment of 3.22 and interpreted as Satisfactory. On the other hand, the indicator "Donate to charity or does volunteer works" yielded the lowest composite assessment of 3.03 interpreted as Satisfactory.

It implies that marginalized sectors are mostly concerned with meeting their stability in life, comfort, enjoyment, and pleasantness. The marginalized sectors perceived a life that is comfortable and stable; however, as charity or volunteering continues it is often criticized to be dependent as the jobless poor continue to be poor, and the disparity between the rich and the poor increases gradually.

Rich Life Aspiration was **Satisfactory** (3.20, σ-0.78) among marginalized sectors. The indicator “Pursue money or power by creating multiple streams of incomes” had the highest composite mean of 3.35 and interpreted as Very Satisfactory. On the other hand, the indicator “Plan for unusual and perspective-changing experiences, such as living abroad for an extended period of time” yielded the lowest composite mean of 3.06 interpreted as Satisfactory.

It implies that marginalized sectors are mostly concerned with pursuing money or power by creating multiple streams of income. In a fast-paced environment, many people created different sources of income to satisfy their needs.

Purpose Statement 3. Determine if there was a significant relationship between the level of implementation of livelihood programs and the level of quality of life among marginalized sectors in Calamba City.

There was a significant relationship between the level of implementation of livelihood programs and the level of quality of life among marginalized sectors in Calamba City. All the probability values (0.000) were less than the level of significance at .05, thus rejecting the null hypothesis. Since the r- value generated were from .672 to .758, it showed that the strength of connection was moderate to very high positive correlation.

This indicates that there is a substantial link between the implementation of livelihood programs and the level of quality of life. This means that the better the implementation of the livelihood programs, the better the quality of life. The result of the study emphasizes the interconnectedness of livelihood to the lives among marginalized sectors as it is subjected to improving their well-being and stability, creating growth in their social and economic statuses, empowering them as individuals, and enhancing their skills and abilities to sustain their livelihoods.

Purpose Statement 4. Describe the lived experiences of the participants from the marginalized sectors on to the implementation of livelihood programs and their quality of life.

Interview Question 1: What livelihood program/s of the government do you have access to and are suitable to your needs?

Theme A

Farming, Poultry, and Fishing Government Initiated Programs

With the theme, Farming, Poultry, and Fishing Government Initiated Programs, the marginalized participants expressed their experiences to various livelihood programs implemented by the government. These livelihoods came from their experiences or subordinate themes which were indicated in the succeeding paragraph.

The implementation of the livelihood program created access and opportunities to the marginalized sectors. The **Chicken and Duck Poultry**, specifically mentioned by Participant 7, *“For example, pecking duck, mga ganyan…and then yung mga chicken na*

palahiin, so yun. Kasama yun…part yun ng naattendan naming seminar and then nareceive namin yung broiler management…yung sisiw nga." was one of livelihood program provided to marginalized sectors. As part of empowerment and poverty alleviation, the government continuously distributes poultry livelihood to provide household income and ensure food stability to marginalized sectors.

However, for some beneficiaries, the broiler livelihood didn't succeed because of the weather. This led them to shift to **Mushroom Cultivation** as what Participant 2 emphasized, *"Unang natanggap namin ay sisiw…kaya nga lang di sya nagsuccess gawa ng panahon. Ang pangalawa ay ang mushroom…ahm…tinanggap namin to galing sa gobyerno."* in an interview. Even landless marginalized sectors could benefit from mushroom cultivation since it has an environment-friendly way of farming. The mushroom production would provide chances to employment and encourage the development of new products.

Meanwhile, **the Fish Farming** was provided to marginalized fisherfolks as what Participant 9 stated, *"Ang naibigay po saamin ay fingerling sa hito na may kasamang feeds. Sa asawa ko po yun. Katulad yan yung mga maghihito nabigyan ng fingerling. Identified ng government kung sino maghihito."* as part of livelihood opportunities to their families. Creating development in employment, the small-scale fisheries and aquaculture activities were essential in provided food to many people and improving the local economy in coastal communities.

Implementation of livelihood programs caters to the needs of marginalized sectors who engage in farming and aquaculture activities. Since these activities occupied a larger portion of the economic growth and survival of individuals, creating programs suitable to their needs would improve their abilities and uplift their way of living.

Interview Question 2: How are these livelihood programs implemented?

Theme B

Government Initiatives

With the theme, Government Initiatives, the marginalized participants provided their experiences of the selection process they had undergone to be qualified to the livelihood programs. These livelihoods initiatives came from their experiences or subordinate themes which were indicated in the succeeding paragraph.

Through **Local Government Initiatives**, selection process was conducted to determine if the marginalized sectors were qualified to the implemented livelihoods as what Participant 10 mentioned, *"Bale ang nangyari…syempre may proseso yan, interview muna kung talagang ako ay karapat-dapat. Kasi meron mga taong walang kakayahan…kailangan talagang i-evaluate. So, since nakita talaga na kailangan naman talaga ng mga kabuhayan dahil meron akong tatlong anak na nag-aaral at walang may hanapbuhay sa aming pamilya, ako ang naging kuwalipikado. Yun ang pinagpasimulan ko para ako magkaroon ng hanapbuhay."* during the conduct of interview. The initiatives help the marginalized to identify suitable livelihoods for their needs, allot adequate

financial resources, support the community in development, and enhance the quality of life of these sectors.

In support, government agencies like Department of Agriculture and Cooperatives and Livelihood Development Department formulated different livelihood programs as what Participant 8 expressed, *"Pag ibinigay ang intervention, livelihood program ng LGU o di kaya ay national government Department of Agriculture, ipinamamahagi naman namin sa mga miyembro",* Participant 4 explained, *"Nakikipagpartner si CLDD. Meron syang project kagaya ng rabbit production…so partnership with Department of Agriculture and CLDD with Sir Philip. So, pag nagseminar ka, meron kang trio…so ang nagbabayad doon ay CLDD tapos binibigay doon sa mga sineminar."* which were distributed to cooperative members. These agencies improved the marginalized sectors' access to economic opportunities, enhanced food stability, and provide income and employment.

Meanwhile, the implementation of livelihood program of government through **Livelihood Seminars** helped the marginalized sectors to participate and engage in livelihood opportunities as mentioned by Participant 7, *"Pinatutupad nila ito sa pamamagitan ng…yun nga pagcommunicate sa iba't-ibang uri ng mga kababaihan, for example. And then through seminars din. Pag nakaattend ka po ng seminar regarding po dito. Yun yung nagstart ang implementation nila"* and Participant 2, *"Una yan inaanyayahan ka ng government…kung ikaw ay willing umattend ng seminars."* which was revealed by the respondents. The livelihood seminars were pivotal in gaining valuable skills and knowledge in improving their livelihoods.

The government's efforts to reinforce different livelihood programs through livelihood seminars and initiatives influence the participation of the marginalized sectors. As these programs bring positive changes for the welfare of minorities, especially those who are economically weaker and deprived, step-by-step procedures and evaluations of possible beneficiaries are conducted. The selection process is based on their needs and knowledge of their livelihood. Through seminars and training, the marginalized sectors can gain ideas and knowledge on the program. These allow them to be more effective in improving their economic stability and strengthen their skills as livelihood beneficiaries.

Question 3: How do these livelihood programs provide opportunities to you and your family?

Theme C
Income and Agricultural Materials

With the theme, Income and Agricultural Materials, the marginalized participants expressed their experiences on livelihood opportunities provided to them and their family. These livelihoods opportunities came from their experiences or subordinate themes which were indicated in the succeeding paragraph.

Providing **Extra Source of Income** to the families of marginalized sectors, the implementation of livelihood programs greatly helped their businesses to thrive and sustain their children's expenses at school as what Participant 10 said, *"Kasi yung*

livelihood program na ipinagkaloob sa akin, that time lahat ng anak ko nag-aaral…so kailangan ko umisip kung saan ako kukuha ng pangaraw-araw naming pagkain, pambaon nila araw-araw. Alam ko na…na meron na akong pagkukuhanan. Nasa goal mo yan kung gusto mo maging maunlad ang negosyo mo syempre pagbubutihin para yung kita mo…yung pangangailangan ng pamilya mo, matustusan mo" and Participant 9*, "Malaking tulong yun samin dahil binigyan kami ng paunang yan para palaguin namin. Dyan po kami magsimula. Kung meron naman po kami ng dati, dagdag sa kabuhayan po."* These livelihoods created network to support the participants monetarily and socially. The income from livelihoods fosters economic growth and financial security to the needs of marginalized sectors.

Meanwhile, the government provided **Aide for Farmers** through acquisition of agricultural materials, as mentioned by Participant 5, *"Okay naman po kasi…laking tulong na po yun kasi hindi na kami bibili tulad ng mga abono tsaka po mga buto. Kumbaga laking tulong na po yun kasi po sa taas po ng abono tsaka po mga buto. Mahal po kasi."* as part of subsidy to small-scale farmers.

These livelihood opportunities are extended to the marginalized sectors' families. The provision of livelihood enhances the chances of generating income and sustaining their needs. Since education plays a vital role in uplifting the situation of these marginalized sectors, they invest in the future of their children. This contributes to additional expenses for the family. Inasmuch, the income they acquire through livelihoods helps their children to continue their studies. Also, providing aid to the marginalized would lessen their expenses in agricultural materials. They could make use of their money for other necessities.

Question 4: What livelihood strategies have you adopted that improve your lives?

Theme D

Assistance, Adjustment, and Expansion Strategies

With the theme, Assistance, Adjustment, and Expansion Strategies, the marginalized participants described their adopted different livelihood strategies. These strategies came from their experiences or subordinate themes which were indicated in the succeeding paragraph.

Through **Pieces of Livelihood Training and Seminars** as what Participant 8 mentioned, *"Katulad sa agrikultura…sa agrikultura kasi may mga trainings ang pagtatanim. Although marunong na naman sila na magtanim, ay yun ay sinusupplement pa ng mga pag-aaral at trainings na binibigay samin ng LGU tsaka national government"* and Participant 6, *"Malaking naitutulong sakin ang mga trainings."* where conducted to improve the marginalized sectors skills and knowledge on the livelihoods provided to them.

Meanwhile, the adjustment strategy in a form of **Hard work and Perseverance** was described by Participant 2, *"Pero napakalaking tulong kasi yun nga bawat bigay ng government pangalagaan mo kung anong meron ka para nagagamit mo habang nabubuhay ka. Yung mga strategies na natutunan ko dyan, dapat may pasensya ka, diba.*

Bawat ginagawa mo kailangan may pasensya ka. Sa pasensya mo dun ka magbubunga…kasi dun mo makikita yung pinagpasensyahan mo na ginagawa mo. Kasi kung wala kang pasensya at naiinis ka na…ano ba yan ayaw magbunga…ano ba yan nabulok, ganun natutunan ko…dapat may pasensya ka sa lahat ng ginagawa mo. At tsaka dapat masaya ka sa ginagawa mo" and Participant 7*, "Unang-una, kailangan ng sipag at pagtatyaga…yun yung unang-una na mai-aim mo sa…na para sa sarili mo. Kasi lahat naman ng bagay mahirap gawin so kailangan talaga ng dobleng sipag, dobleng pagtatyaga doon sa uri ng livelihood na gaganapin mo."* helped improve their lives. The marginalized sectors considered these strategies in achieving their goals in life.

Additionally, **expansion of Income Creation, Networking, and Marketing** as were explained by Participant 1, *"…nagkaroon po kami ng extra income na makakatulong din po doon sa pagbabayad ng bills kasi po bawat gumagawa kami at nagti-train, kahit papaano may binibigay po silang honorarium at isa na rin po ako sa nagmamarket. Kahit papaano may percentage po kami"*, Participant 4 *"Next yung marketing naman. And hopefully magkaroon kami dito ng establishments, yung maluwang namin na lugar na yan is…paupahan namin sa mga gustong magtayo ng mga kainan"*, and Participant 10, *"…kapag pala ikaw may pangkabuhayan matututo kang makisama, magmanage…maliit man o malaki na business, matututo kang magmanage ng negosyo para maging maunlad, para mamonitor mo kung kumikita ka o hindi. Kung kailangan mo ba ng plan B mo para hindi mawala ang hanapbuhay na ipinagkaloob sayo. Para patuloy ang kita mo."* developed their skills in marketing, create additional income to the family, and build linkages and networks.

The adopted strategies such as training and seminars help in improving their knowledge and skills. It also gives way for the marginalized sector to expand their linkages to possible customers of their products. The success of the business is through the effort and perseverance of the marginalized sectors. They value their hard work in improving their livelihoods no matter how small or large the business is. It also led them to be more creative and innovative to reach their target market. The creation of online marketing was one of the easy ways of distributing their products. It also helps them cope with different challenges.

Question 5: How do the skills acquired empower you as an individual?

Theme E

By Gaining Additional Knowledge and Skills

With the theme, By Gaining Additional Knowledge and Skills, the marginalized participants expressed the skills they have acquired that empowered them as individuals. These skills came from their experiences or subordinate themes which were indicated in the succeeding paragraph.

The marginalized sectors emphasized the importance of skills acquired through **Livelihood Training and Seminars** in creating changes into their lives as mentioned by Participant 8, *"Sa pamamagitan ng pagsasanay, nadadagdagan ang aming kaalaman. Noong una konti lang ang kaalaman namin sa pag-aalaga ng baboy tsaka*

manok…ngayon alam na alam na namin. At sa pagtatanim man, ganun din naman" and Participant 9, *"Paraan ng pag-aalaga po ng mga hito. Kaya yun po ang lagi naming hinihingi na dumami pa ang mga seminar na aattendan kung paano po namin matututunan ang ganoong paraan at para lalong gumanda ang pag-aalaga."*

The livelihood training and seminars provided by the government improve their knowledge of different livelihood activities. Though small-scale farmers and fisherfolks have previous knowledge in farming, poultry-raising, and aquaculture, still, they are still looking forward to more seminars that will enhance their skills and abilities. Since the world is evolving, and many innovations are made to make work easier it will be an advantage for the marginalized workers to learn new things. These things will not only improve them as individuals but also empower them to aspire for a better life.

Question 6: How do the government strategies help you in measuring relevance and timeliness of livelihood programs being implemented?

Theme F

Availability, Reliability, and Technical Efficiency

With the theme, Availability, Reliability, and Technical Efficiency, the marginalized participants expressed how the government strategies helped their access to implemented livelihood programs. These government strategies came from their experiences or subordinate themes which were indicated in the succeeding paragraph.

The application of **Acquired Knowledge and Skills through Availability of Training and Seminars** helped identify who were the target beneficiaries of the livelihood programs as what Participant 7 discussed, *"So ngayon, para sa akin malaking tulong yung kanilang strategy na naiisip na yan kasi yung mga kagaya namin na individual natututo at the same time nakikinabang. Kumbaga yung mga programa ng gobyerno ay naibababa nila sa bawat indibidwal dito sa mga Calambeno. Masasabi kong maganda yung strategy na naisip nila na yung mga ganitong uri ng livelihood ay nare-reach out nila lalo na yung mga tao na nasa mga laylayan"* and Participant 8, *"Unang-una tinatanong nila kung sino ba ang mga interesado…mga prospective na magiging participant. Syempre yung mga participant ay interesado, may pagmamalasakit sa pagsasaka at livelihood. Kasi buhay na nila yan eh. At kapag nalaman ng gobyerno natin magse-set sila ng training, magcoconduct at ibibgay naman nila saamin."* revealed in an interview. These marginalized sectors described the government strategies as an effective way to reached and include them.

On the other hand, the importance of **Reliability to Government Support and Initiative** greatly influenced the success of the livelihood implemented as what Participant 2 explained, *"Nakatulong itong binibigay ng government, unang-una kasi biyuda ako. Syempre kapag biyuda ka, ang hanap mo, hanapbuhay talaga. Mapagkakakitaan para maitaguyod ang mga anak mo lalong-lalo na nung ang mga anak ko ay nagco-college. Malaking tulong sya kasi pandagdag kahit pamasahe. Kahit na walang meryenda basta may pamasahe sila. Yun ang malaking tulong na naibigay saakin"* and Participant 1, *"Ma'am, bale ang sa government namin ngayon very supportive lalo na po yung DA. Pag*

nagti-training po sila under ng sa mga gardening…bale sinasama po nila ang mushroom. At ang government ay nagsusupply naman po sila ng pangangailangan, kumbaga starter kit sa mga taong nag-aral ng training. At least meron po silang maumpisahan para po sa pangkabuhayan nila." to sustain the marginalized sectors' daily needs. The initiatives and support from the government, enabled the marginalized to maintain their livelihoods.

In like manner, **Technical Efficiency to Business Opportunities** created higher chances of success in livelihood as what Participant 10 discussed, *"Kumbaga yung isip ko na-open, nabukasan sa ganyang larangan na ang pagbubusiness, maliit man o malaki, talagang ano ka, kailangan mong maging ano sa Negosyo…matalino para hindi mawala yung binigay sayo."* during the conduct of interview.

The government strategies allow the marginalized sectors to benefit economically and technically from business opportunities. It creates an impact on interested marginalized sectors to engage in livelihood activities. The training and seminars provided them with new ideas on how to sustain their livelihoods and the government support and initiatives allowed them to lessen their expenses in farming, fishing, and even in poultry production. The support enables them to access freely such materials needed in their livelihoods.

Question 7: How do these livelihood programs increase your profit in the market?

Theme G
Marketing and Financial Strategies

With the theme, Marketing and Financial Strategies, the marginalized participants emphasized how their profit increased in the market. These profit increment came from their experiences or subordinate themes which were indicated in the succeeding paragraph.

The **Online Marketing, Unique Products, and Product Pricing** as what Participant 4 explained, *"Online marketing. Meron kami through ATI naman. So, tinuruan naman kami ng digital marketing pero syempre hindi naman ganun kalaki yung…more on kasi ito ng eco-farm. Eco-tourism farm. So, ang amin is a little of everything. Yung ano namin dito ay hindi talaga yung maximize farming o commercial farming",* Participant 3, *"Sa pamamagitan ng harvest time, benebenta at ang iba pa pong mga kasamahan ay benebenta online.",* Participant 1, *"Sa ngayon po, maganda naman ang naging impact. Isa na rin po ito sa nagiging…first na pangkabuhayan dito sa Calamba- ang mushroom.", and* Participant 5, *"Sa merkado po hindi po yun katulad ng idadaan pa sa iba. Kaya yung price po nya nami-maintain po namin. Kaya malaking tulong po yung direkta na naidadala."* have seen the potential of digital marketing in creating access to business opportunities, utilizing resources, opening of new perspectives and ideas, and controlling the business.

Meanwhile, the **Profit Gain** helped in sustaining the marginalized sectors business as what Participant 10 stated, *"May notebook kasi ako na sulatan, syempre may presyo yun na may tubo na tayo…hindi man mahal pero kikita tayo kasi pag sobrang mahal hindi*

tatangkilikin ng tao. Kung ang tubo mo naman ay hindi kalakihan pero mauubos din agad edi maganda ang pasok ng income sayo. Konti man pero mabilis ang benta" and Participant 7, *"Karagdagan lang kasi yang kita…So malaking bagay kasi additional sya. For example, ito nga pong pag-aalaga ng sisiw, syempre may karagdagang kita dito eh…"* could increase their profit.

Marketing strategies such as selling the products online, the uniqueness of products, and their price help the marginalized to thrive in business. In today's era, livelihoods survive not only because of the large production of products but also because of the innovation of the business owners. Different platforms can be used to reach and offer the products to customers. The profit gain can help expand the business of the marginalized and create additional income for their families.

Question 8: How do these livelihood programs help yourself and your family?

Theme H

Personal and Financial Development

With the theme, Personal and Financial Development, the marginalized participants expressed how livelihoods help them and their families. The development came from their experiences or subordinate themes which were indicated in the succeeding paragraph.

The **Personal Development through Personal Growth and Development and Improvement in Life** delved to the necessities of their families as what Participant 4 discussed, *"Kaya yung kita ko sa pagtatanim, isi-save ko yun para yung expenses sa bahay at sa farm. Yung…yung income na yun nagagamit nila para sa mga pangangailangan sa bahay nila at sa farm. nakakatulong para mapaunlad ang kanilang pamumuhay pagdating sa farming"* and Participant 1, *"Noong una po dahil isa lang akong plain housewife, hindi po ako nakikisalamuha. Dahil po sa mga programa, nakishare po ako sa mga livelihood programs, unti-unti ko po nadevelop ang sarili ko."* The development significantly affects the marginalized sectors' status in their families and in community.

Furthermore, Participant 5 discussed the **Financial Gain** of the livelihood programs provided to them, *"Sa loob po ng isang araw nakakapag-ipon…nakakapagtabi pa naman kahit papapano ng kaunting kita. Bukod po sa panggastos sa pang araw-araw ay yung ito naman, nakakapag-ipon kami na naidadagdag namin…tulad ng nakapagpagawa po kami ng bahay. Tulong na rin po kaming mag-asawa bukod po sa kinikita sa gulay at sa pagtitinda, yun nakakaipon kami. Unti-unti namin napapagawa itong bahay."* and Participant 7, "Participant 7, *"So ngayon ang masasabi ko lang dun na ang tagumpay eh yun nga nagkaroon ako ng additional income sa pamamagitan nito"*, and Participant 8, *"Unang-una, pag nakita kami nakita din ang miyembro. Nagkakaroon kami ng mga dibidendo."* which helped the marginalized sectors to save money and improve their conditions in life.

Meanwhile, **Financial Aid for Education Expenses** assisted the children of marginalized as stated by Participant 10, *"Maliit man ang kinikita pero andun pa din ang puhunan ko…dun palang din alam kong may kikitain ako. Araw-araw na panggastos ng mga anak ko. Di naman puwedeng ang bata papasok sa school…Yun yung priority ko, at least kahit papaano ang baon nila doon na",* Participant 9, *"Siguro po yung maitawid namin yung pang araw-araw namin at mapag-aral ko ang mga anak ko gamit ang pangkabuhayan na naibigay samin",* Participant 3, *"Karagdagan lang kasi yang kita…So malaking bagay kasi additional sya. For example, ito nga pong pag-aalaga ng sisiw, syempre may karagdagang kita dito eh…",* and Participant 2, *"Yung pinakatubo ang gawin mo wag mong kunin lahat, magtira ka rin para sa kapital para umunlad ng umunlad yung binigay sayo ng government na pangkabuhayan..maipagmamalaki ko kahit ako ay biyuda, nakapagtapos ang lima kong anak ng kanilang piniling kurso".* It was audible to the marginalized sectors that the implementation of livelihoods greatly supported their children's education and necessities in their homes. It became their source of living in times of crisis and tough situations.

Personal and financial development help the marginalized and their families earn additional income that they can use to save money, finance their children's needs, and reconstruct their houses. Aside from income stability, the marginalized sectors develop their personal growth. Their livelihoods provide them chances to improve their lives, discover new skills, and unleash their full potential.

Question 9: What do you aspire/ wish to have in life?

Theme I

Sustainability of Livelihood Programs and Children's Education

With the theme, Sustainability of Livelihood Programs and Children's Education, the marginalized participants showed their aspirations in life. These aspirations came from their experiences or subordinate themes which were indicated in the succeeding paragraph.

The idea **To Pass on and Continue the Livelihood Programs to Future Generations**, as what Participant 1 mentioned, *"Unang-una ma'am syempre, hindi ko naman masasabi na habang panahon nandito ako. Ang inaano ko lang ma'am, lahat ng naturuan ko sana maging successful din sila at marating din po nila kung ano man ang narating ko ngayon. At sana naman po, ipapasa din po nila sa susunod na henerasyon at maging pakinabang din po sa susunod na kabataan"*, Participant 4, *"Yung matrain ang mga katulad nyo na kabataan, ma-equip kayo sa knowledge…iba kasi utak ng kabataan, para sila na magtutuloy. At mamotivate din kayo na hindi puwedeng mawala ang farmers"*, Participant 8, *"Dapat kahit hindi yung matatanda ngayon…dapat mamulat ang mga kabataan sa livelihood program na sinasabi. At sana magtuloy-tuloy na yang livelihood program na yan. Hindi naman masama yan, bagkus nakakabuti sa isang tao, isang pamilya na magkaroon ng livelihood activities",* and Participant 2, *"Alam mo ang pinapangarap ko…sana ang tao matuto kung ano ang binigay ng gobyerno sayo. Sana yung mga taong binigyan ng livelihood, paunlarin nila, mahalin nila…kung ano ang binigay sa kanila ng government. Kasi minsan lang yan sa buhay eh. Hindi ka puwedeng*

umulit. Wag mong sayangin ang bawat biyayang ibinibigay sayo ng government." aspired the marginalized sectors to ensure the balance and sustainability of livelihoods in long-term needs for future generations.

Additionally, the aspiration of **Wishing for their Children to Finish Studies** as what Participant 3 explained, *"Sana kahit ganito ang kabuhayan namin…sana makatapos ng pag-aaral ang aking mga anak"*, Participant 7, *"Wala ako masyadong winiwish. Ang gusto ko lang talaga makatapos ng pag-aaral ang mga anak ko. Yun lang"*, Participant 9, *"Sana tuloy tuloy itong ibinigay saamin na livelihood. Tsaka po sana yung mga anak ko mapagtapos ko kahit ito lang po ang hanapbuhay namin"*, and Participant 6, *"Simpleng buhay lang tsaka makatapos ang mga anak ko ng sa ganun may maganda silang kinabukasan."* Aspired the marginalized to buy the things their children's needs in school through the livelihood programs provided to them. It was because in the future, they wanted their children to have a better life. The investment to education elevated opportunities and transcend improvement and development to economic growth of the children of these sectors.

Sustaining the livelihood programs for the next generations created a positive impact on the lives of marginalized sectors and their children. In the future, these children would generate appropriate income opportunities to help improve their economic sufficiency, develop their self-reliance, and enhance their quality of life. Through this, aspiring for the marginalized sectors' children to finish their education through livelihoods influenced their perception of life.

Summary of Findings

1. Level of Implementation of Different Livelihood Programs to Marginalized Sectors in terms of:

1.1 Applicability

It had a general assessment of 3.17 verbally interpreted as Implemented.

1.2 Acceptability

It had a general assessment of 3.21 verbally interpreted as Implemented.

1.3 Marketability

It had a general assessment of 3.15 verbally interpreted as Implemented.

1.4 Sustainability

It had a general assessment of 3.18 verbally interpreted as Implemented.

2. Life Satisfaction among Marginalized Sectors in terms of:

2.1 Life Satisfaction

It had a general assessment of 3.21 which was verbally interpreted as Satisfactory.

2.2 Affluent Life

It had a general assessment of 3.14 verbally interpreted as Satisfactory.

2.3 Rich Life Aspiration

It had a general assessment of 3.20 verbally interpreted as Satisfactory.

3. Test of Significant Relationship between the Level of Implementation of Livelihood Programs and the Level of Quality of Life among Marginalized Sectors in Calamba City.

There was a significant relationship between the level of implementation of livelihood programs and the level of quality of life among marginalized sectors in Calamba City. The interconnectedness of applicability to life satisfaction had .758, affluent life (.735), and rich life aspiration (.727). Meanwhile, acceptability to life satisfaction had .707, affluent life (.691), and rich life aspiration (.696). The marketability linked to life satisfaction had .721, affluent life (.699), and rich life aspiration (.742). Sustainability was related to life satisfaction which had .704, affluent life (.672), and rich life aspiration (.748). The level of significance was less than .05, thus, assessment of two groups of respondents had proved similar perspectives regarding the importance of livelihood to the economic improvement of marginalized sectors.

4. Lived Experience of the Participants from the Marginalized Sectors on the Implementation of Livelihood Programs and their Quality of Life.

The experience of marginalized sectors in accessing livelihood programs offered by the City Government greatly influenced their quality of life. It was reflected how livelihoods unfold different opportunities for them and their families as it created additional sources of income, improved their skills in farming, fishing, and poultry raising, developed their financial and personal growth, and helped them lessen their expenses in agricultural materials.

The initiatives of local government, cooperatives and associations, and the conduct of livelihood seminars intensified the promotion of combating poverty and inequality among marginalized sectors who have lesser access to opportunities and financial stability. Through this, various livelihood strategies have been adopted such as marketing, networking, technical efficiency, assistance, expansion, adjustment, reliability, availability, and financial strategy which improved the marginalized sectors' way of living. The livelihood approach provided solutions to the problems of marginalized sectors through creation of participatory and dynamic development opportunities for them.

This proved how the marginalized aspired for sustainable livelihood for future generations and continuous education of their children. These livelihoods not only reduce vulnerability but also secure income and necessities in life.

5. Proposed Livelihood Programs

Based on the result of the study, the proposed livelihood program for marginalized sectors entitled, "GADLiCAL Ni Rizal Program known as Gabay at Alalay sa Dalisay na Buhay gamit ang LIvelihood para sa CALambuenos Ni Rizal" has its purpose of giving direct market to marginalized sectors' products in partnership with identified private sector/s through MoU. Also, the program aimed to provide win-win solutions to

beneficiaries' selling products and consumers' source of affordable yet fresh food at the table. This partnership would support the local farmers to grow their businesses and improve the local economy. It promoted efficiency where they could maximize their products with minimal costs. Besides, this approach would avoid the local farmers to compete with excessive importation of products in the market which was one of the main sources of hardships of marginalized sectors. Through 'gabay (guide) and alalay (support)', the Gender and Development Office would create linkages and assistance in a form of MoU, distribution of seeds, capital, and agricultural materials to marginalized sectors in Calamba. In this way, they could earn a living and sustain their livelihoods.

Conclusions

Based on the accumulated results, the following conclusions are made:

1. That livelihood programs offered by the City Government of Calamba in terms of applicability, acceptability, marketability, and sustainability were implemented. These livelihood programs are suitable to the needs of marginalized sectors as it provides technical and financial support for effective livelihoods, helps them adapt to different livelihood strategies, identifies the ideal program beneficiaries, draws attention to available goods and services, gains viable profits or income, and generated employment opportunities towards economic stability. It is also vital in coping with different shocks and stresses, enhancing skills, capabilities, and assets, and promoting active participation among marginalized sectors.

2. That the quality of life among marginalized sectors in terms of life satisfaction, affluent life, and rich life aspiration are satisfactory. Their satisfaction includes their capacity to work, personal relationships, good sleep, life stability, comfort, enjoyment, pleasantness, and the ability to create multiple streams of incomes. Through these ways, the marginalized sectors secure their necessities and improve their standard of living.

3. That implementation of livelihood programs and the quality of life significantly affect the economic security and wellbeing of marginalized sectors. The applicability, acceptability, marketability, and sustainability of livelihoods accessed by the marginalized sectors influence their life satisfaction, life affluence, and even their aspiration. It enhances their abilities and skills for personal and economic development.

4. That marginalized sectors' experiences on livelihood programs offered by the government show positive impacts in their lives. Their livelihoods enable them to support their children's education and other expenses. It allows them to be participative and efficient in different skills enhancement, improve their life conditions, and provide solutions for sustainable livelihoods to future generations.

5. That the proposed livelihood program was necessary to marginalized sectors as it would help them improve their marketing strategies when selling their products and/or

services. The program will serve as a linkage for stable income, help grow the marginalized sectors' businesses, and improve the local economy.

Recommendations

Based on the findings of the study, the following recommendations were offered:

1. The City Government may include the necessary livelihood programs based on the priority needs of marginalized sectors. It may observe proper allocation of fund and time frame of the program during planning and budgeting process. Since marketing of products is quite challenging for marginalized sectors, the government may introduce a program that will efficiently help them to connect directly to buyers. This approach may somehow provide them with a steady income and improve their life situations.

2. Implementers may conduct an intensive monitoring and evaluation to know the effectiveness of the program being implemented. They may identify issues and concerns, track improvements/progress, and measure the livelihood outcomes of marginalized sectors. With this process, the government may discern if the livelihoods create positive changes to the lives of marginalized, enhance their self-sufficiency, and secure holistic solutions to their necessities in life.

3. The implementers may engage the marginalized sectors in the discussion by providing solutions on how to market their products effectively. These marginalized sectors may act not only as beneficiaries but as participants of the program where they are included in decision-making. By empowering them, the government may provide appropriate income-generating opportunities and economic development for them.

4. Implementers may extend support or grant assistance to the children's beneficiaries to ensure their future through education. Though livelihoods allow the marginalized sectors to have food on the table and support the needs of the family through available funds, still, the income cannot meet the educational needs/ expenses of all their children. So, it is crucial that the government extends its support to the marginalized children to become economically resilient and help reduce vulnerabilities.

5. The City Government of Calamba may optimize the utilization of livelihood programs to help grow the marginalized sectors' businesses and provide financial independence. The assistance from the government may create equitable opportunities for marginalized to improve their capacities in the labor market.

6. Similar research may be conducted to further examine the issues and concerns about the implementation of livelihood as well as highlight its impact on people's lives.

Compliance with Ethical Standards

The ethical concerns were followed by the researcher as those were considered in this paper. Necessary letters of approval to conduct interviews and surveys with people

belonging to marginalized sectors in Calamba City were recorded. Through informed consent, disclosing of names and identities of participants and respondents was handled with utmost confidentiality to avoid and protect them from potential harm. The study had taken up respect for the privacy and autonomy of the respondents of the study. The duration and clear purpose of the research were also explained to the respondents.

Also, upon the approval of the questionnaire, it was distributed, and interviews were conducted with the participants. Honest and accurate interpretation of results from the questionnaires were tabulated, consolidated, analyzed, and interpreted. Statistical treatment was followed. The proper citations and acknowledgment were considered. Transparency of data results, methods, and procedures were also shown in the study.

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MODULAR DISTANCE LEARNING IN HIGHER EDUCATION DURING THE NEW NORMAL: A SYSTEMATIC REVIEW

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ABSTRACT

In the Philippines, attempting to push through education despite the fatal pandemic caused by Covid-19 has proven to be a difficult undertaking. Despite several objections, the Commission on Higher Education (CHED) accepted and implemented the flexible model of blended learning. Modular (Printed), Modular (Digital), Online, Educational TV, Radio-Based Instruction, Home Schooling, and Blended Learning are the many learning modes. Using the systematic review, the study aims to determine the main educational experiences that used the Modular Distance Learning approach for the promotion of educational knowledge within the Higher Education stage. Modular Distance Learning is implemented for those living in rural areas or provinces where internet connection is only available for a few. The usage of Modules created by instructors with various tasks and learning activities based on the fundamental learning abilities is known as modular distance learning. Thus, the main findings of the study revealed that the implementation of modular distance learning or distance education resulted in a significant improvement in students' knowledge of the specific content covered, despite the fact that both technical and non-technical problems occur during their teaching in distance learning.

Keywords: Higher *Education, modular distance learning, new normal education, COVID-19, systematic review, Philippines*

INTRODUCTION

Education has a significant impact on the lives of learners. Instructors are an important part of this process since they are one of the most important tools for delivering high-quality education. The introduction of COVID-19 in the Philippines resulted in significant changes in the educational environment. One of these is the Commission on Higher Education's implementation of a new form of education. Most education systems have been forced to create alternatives to face-to-face teaching and learning as a result of the present COVID-19 dilemma. Many educational institutions have relocated activities online in order to continue teaching despite classroom closures (Ambayon 2020).

The transition in school teaching-learning delivery to modular distant learning makes the delivery of fundamental quality education more difficult for school workers. That is why CHED officials are always looking for solutions to alleviate challenges and equip instructors and college administrators to be more effective in the field of modular remote learning (Bagood 2020).

In the Philippines, modular distance learning is the most widely used learning delivery method, in which students study classes via self-learning modules. Students are provided self-learning modules once a quarter to continue their self-paced study at home. (Dangle and Sumaoang 2020). Individualized teaching in which the learner employs self-learning modules and other learning resources with little contact from the teachers is referred to as this modality (Lapada et al 2020). The faculty's role in this modality, however, is to keep track of the student's progress. The student may request assistance from the teacher by email, text message, instant chat, phone call, or even a home visit. Moreover, any family member or stakeholder in the community may be served as a para-teacher to assist the learning needs (Malipot 2020) In modular distance learning, students are autonomous and agents to take charge of their learning individually . Because the exercises on the modules are self-paced, they build a sense of responsibility. Instructors must, however, assess students' learning requirements, offer necessary interventions, and use accessible local resources, such as internet materials (Martineau et al 2020).

The new normal education, along with its many modalities, was first met with opposition due to the risk, but thanks to the efforts of education sectors in the Philippines, it is now being implemented systematically with the objective of continuing education despite the pandemic (OECD 2020). Even in this sort of academic setting, where students learn at home with the assistance and supervision of their parents or guardians in their SLMs (self-learning modules), there are more students who are learning. These learners are open-minded learners and flexible with changes in their environment (Lapada 2020).

The designated teaching staff, in collaboration with the Deans and Program Heads, developed modules in all topics for programs/year levels throughout the semester beginning academic year 2020-2021, in accordance with the CMO on Blended Learning These self-learning modules are already learning packages, including a pre-test, discussion, and a set of evaluation/assessment questions. With the modular learning class schedule, they are given to all learners. Teachers in public schools all around the

Philippines have adopted this type of educational strategy. Teachers are critical to maintaining high-quality education in the face of the epidemic (Konopka 2015)

Faculty members were acutely aware of the COVID-19 pandemic's existence and repercussions. Despite the hazards posed by the COVID-19 pandemic, teachers continue to assist students by developing modules that act as a learning guide (Aguilera-Ruiz 2017). As a result, the teacher becomes a facilitator in the growth of the student as a member of their community and society (Abellan-Toledo 2016). However, teachers also air their problems on modular distance learning (Colomo 2020). As front-line educators in the educational system, they have undergone various training and seminars to better equip them to deliver better education in the face of the COVID-19 pandemic, as it is a standard practice for the department to train teachers not only for professional growth but also to be prepared for unexpected circumstances (Albirini 2018).

When compared to traditional teaching methods, modular education is more effective in the teaching-learning technique because students study at their own pace (Allagui 2014). It is an unlimited self-learning process in which students are stimulated and their interest is piqued by quick reinforcement, such as a remark on a practice exercise. As a result, this type of learning modality promotes a student-centered learning strategy. However, instructors, students, and parents faced several obstacles as a result of the deployment of modular learning (Aminullah 2019). Lack of school funds in the design and distribution of modules, kids' struggles with self-study, and parents' lack of understanding to academically advise their child/children were the primary issues that arose. As a result, it is clear that there are challenges involved with using modular distance learning (Annamalai 2019).

Due to the country's current covid-19 crisis, parents have become more aware of their role in their children's learning and education. They now understand that teaching is a difficult task. There are parents who have adapted to the current circumstances and do not criticize teachers if they are their children's teachers at home these days (Azhar and Iqbal 2018)

In this time of epidemic, students are learning not just particular topics, but also morals. They learn time management since, even if they are at home, they must adhere to their timetable when completing the learner's answer sheets based on their SLM or self-learning modules. They also form stronger bonds with their parents and guardians while studying and teaching at home (Beri and Sharmah 2019)

Some teachers see the epidemic as an opportunity for educational advancement by creating self-learning modules (SLMs), which compile all of the essential lessons, objectives, and competences into a single module for different courses every semester (Bidarian 2011)

The efficiency of distant education systems is influenced by a variety of elements that influence their success or failure. These include the impact of distance learning theory on instructional design and delivery, redefining the roles of partners in distance education teams, media selection, technology adoption, change implementation,

methods and strategies to increase interactivity, inquiry, and active learning, learner characteristics and modes of learning, teacher mediation and learner support, as well as operational issues, policy and management issues, and cost/benefit tradeoffs. It's meant to be read with Sherry and Morse's (1994) training needs assessment (Blake 2016)

Research Questions

Based on these ideas, the main objective of this work was to locate the main educational experiences that would use the Modular Distance Learning approach for the promotion of educational knowledge within the Higher Education stage. With this purpose in mind, the study aimed to answer the following questions:

(1) What journals have published scientific articles on this field?;

(2) What are the methods and instruments used in measuring the effectiveness of the modular distance learning?; and

(3) What are the main experiences and reason of using the modular distance learning approach in achieving the acquisition of knowledge?

METHODOLOGY

Based on the ideas set out above, this work is part of the systematic literature review method, conceived as that which analyses information provided to generate an overview of a certain object of study, specifically information provided in databases or scientific reports (Cresswell 2014). This type of research allows the categorization of the results to date on the topic, as well as measuring the data based on different criteria regarding the relevant issues that need to be clarified (Chun 2016)

For this purpose, the methodological process consists of a sequence of steps that go from the defining of the scope to the classification of the data obtained. For this purpose, the work phases proposed in the PRISMA declaration (Preferred Reporting Items for Systematic reviews and Meta-Analyses) were followed (Ekmekci 2015)

The examination process carried out was divided into two steps:

Planning: This protocol included the establishment of descriptors and databases from which the scientific articles would be obtained, as well as the defining of the research questions, inclusion and exclusion criteria, and the formulation of the research questions.

Action: We went on to locate references in the chosen databases, refine the data using various filters to extract information, and finally create a visual representation of the data. The inclusion and exclusion criteria were created in accordance with the study's aims and the PRISMA declaration's guidelines (Cresswell 2014).

Search Strategy

The search of the scientific papers was carried out in the international databases Web of Science (WoS) and Clarivate Analytics. These two databases were chosen for their potential and international reputation, as well as for the criteria they use to index their articles (Faramarzi et al 2021). In the case of the Web of Sciences, the search was carried out in the Social Sciences Citation Index (SSCI), Science Citation Index Expanded (SCIE) and Arts and Humanities Citation Index (AHCI). The search equation was used, which is composed of the following descriptors: “Modular Distance Learning” or “Distance Learning”, and “Distance Education”.

The descriptors were applied in the searching engine of both databases in order to filter them further. In order to do so, a list of inclusion and exclusion criteria was set up to limit the study sample (Table 1).

To avoid any bias in the selection of the studies, after other works of systematic review (Fay and Matias 2019) the researcher conducted the systematic review using the identical descriptors and criteria for inclusion and exclusion.

Table 1. Inclusion and Exclusion Criteria.

Inclusion Criteria (IC)	Exclusion Criteria (EC)
Published in Web of Science indexed with Science Citation Expanded (SCIE), Social Sciences Citation Index (SSCI), and Arts and Humanities Citation Index (AHCI)	Not published in Web of Science indexed with Science Citation Expanded (SCIE), Social Sciences Citation Index (SSCI), and Arts and Humanities Citation Index (AHCI)
Articles published in Clarivate Analytics	Articles are published in SCOPUS and others
Articles written in English	Articles that are not written in English
Articles available in Open Access	Articles not available in Open Access
Educational experience in which I used the Modular Distance Learning Approach in the field of Education	Educational experience in which I used the Modular Distance Learning Approach in another field of discipline
Has 2020 Journal Impact Factor	Has no 2020 Journal Impact Factor

Procedure

First, using the Prism Declaration as a reference, the procedure was divided into four specific phases. The first, called “Identification”, consisted of applying the database search equation, filtering the search for scientific articles (IC1, EX1) in English (IC3, EX3), obtaining a total of 7 documents (WoS; Clarivate Analytics). After that, in the review phase, most of the inclusion criteria (IC2, IC4, IC5) and exclusion criteria (EX2, EX4, EX5) were applied. In order to shorten this procedure, a flow chart is presented that shows the process described from the initial location of documents to the final scrutiny of the sample of articles that make up the systematic review study (Figure 1).

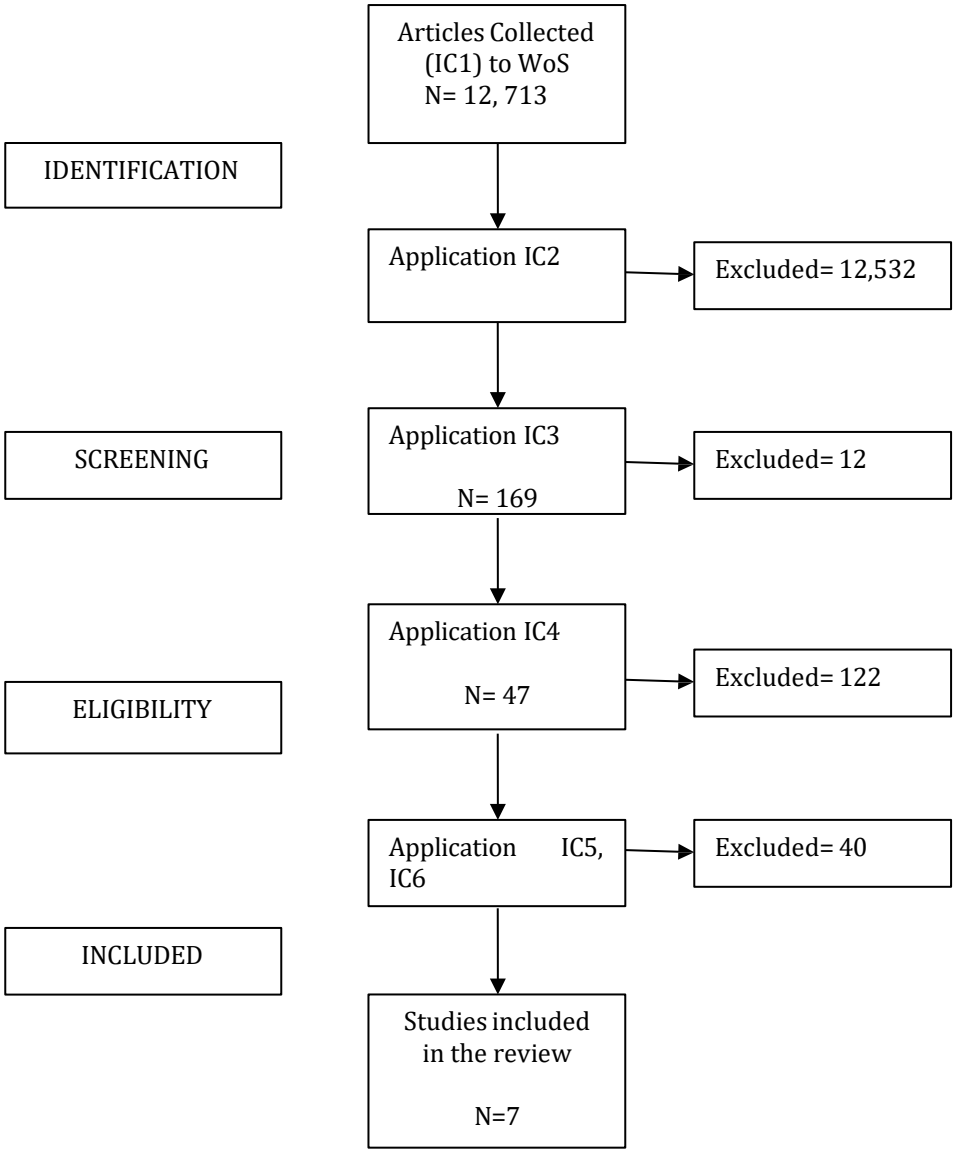


Figure 1. Flow chart of the phases that make up the systematic review

RESULTS

First, the studies were grouped according to the year in which they published (Figure 2). In this case it can be seen that the year 2020 was the one with most contributions, followed by 2021 and 2019, respectively.

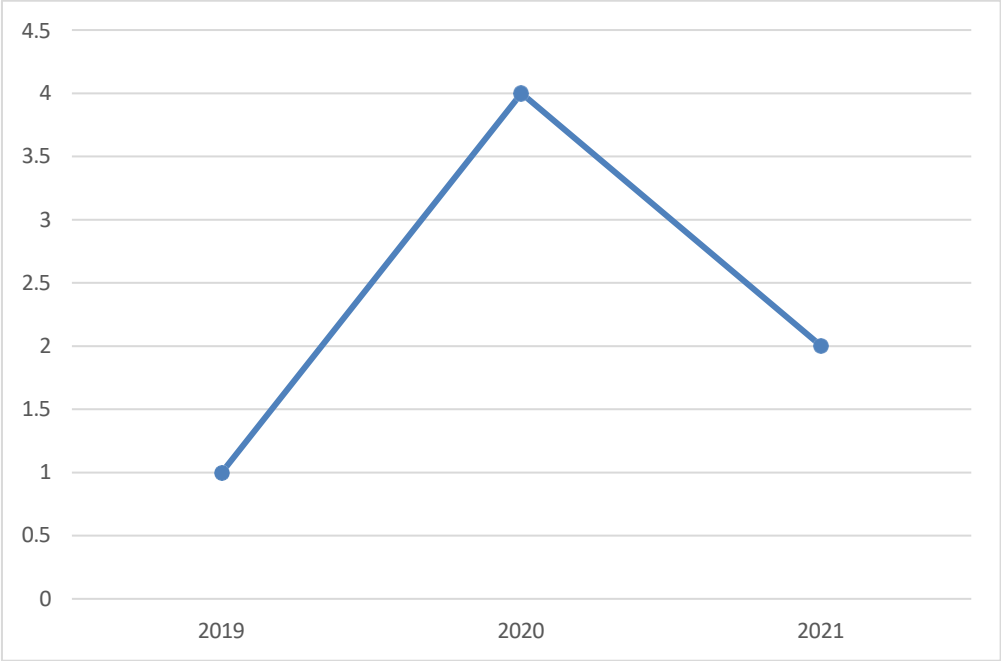


Figure 2. Number of articles per year

On the other hand, looking at the journals in which these scientific papers have been published (Table 2), it can be seen that the articles have been published in different platforms. According to the origin of the journals, they correspond to different countries, among which the United States of America stands out with four (4) publications

Table 2. Journal Origin According to Country

Reference	Journal	Country
Poellhuber, et al. (2019	International Review Of Research In Open And Distributed Learning	Canada
Fairlie, R., & Loyalka, P. (2020).	NPJ Science Of Learning	Germany
Williyan, A. (2020)	Language Learning & Technology	USA
Cellini, S. R., & Grueso, H. (2021	AERA Open	USA
Nieuwoudt, J. E. (2020).	Australasian Journal Of Educational Technology	Australia
Fidalgo, et al (2020)	International Journal Of Educational Technology In Higher Education	USA
Marzoli, et al. (2021).	Physical Review Physics Education Research	USA

According to the education contents that have been addressed during the Modular Distance Learning experiences, it mainly corresponds to the treatment of the derivative and the limit of functions (Table 3).

Table 3. Education Content covered in each educational experience.

Reference	Education Content
Poellhuber, et al. (2019)	Understanding Participants' Behavior in Massively Open Online Courses
Fairlie, R., & Loyalka, P. (2020)	Schooling and Covid-19: lessons from recent research on EdTech

Williyan, A. (2020)	ICT in Distance Learning: Teacher's Attitudes and Problems
Cellini, S. R., & Grueso, H. (2021)	Student Learning in Online College Programs
Nieuwoudt, J. E. (2020)	Investigating Synchronous and asynchronous class attendance as predictors of academic success in online education.
Fidalgo, et al. (2020)	Students' perceptions on distance education: A multinational study
Marzoli et al. (2021)	Effects of emergency remote instruction during the COVID-19 pandemic on university physics students in Italy

Finally, each investigation's goals were examined in depth, as well as the technique employed and the reason of using modular distance learning on students once the approach was implemented (Table 4). In general, all studies assert that using Modular Distance Learning has improved instructors' and students' attitudes toward Distance Learning, and in some cases, the entire discipline. Parallel components of learning, such as self-learning (independent learning), autonomous learning (individual learning), and greater academic achievement, also benefit. On the other hand, methodological quantitative studies, as well as experimental, quasi-experimental designs of a comparative character across academic years.

Table 4. Education Content covered in each educational experience.

Objective	Method	Instrument	Reasons in using MDL in the New Normal
To systematically divide the large number of learners into categories or patterns that would make sense from a behavioral engagement perspective.	Quantitative study relied on big data and learning analytics methodology, qualitative, mixed method using the exploratory analysis	Resources (document, video, etc.), events (discussion, communication, etc.), and visits (logging in the course webpage).	If to consider the engagement capacity of students, modular distance is more convenient.
To evaluate the effectiveness of EdTech as a substitute for traditional schooling	Experiment	computer-assisted learning program	It is much accessible for the kind of students in the community.
To investigate the attitude of the teachers towards the use of ICT in distance learning as well as the problems faced by them	Mixed method (mixed of quantitative and qualitative method)	Questionnaire, and semi-structured interview questions	It is more reliable and convenient to students who do not have gadgets
To compare the performance on the exit exam for students in online and on-campus programs both across and within institutions, degrees, and majors	Quasi-experimental	computer-assisted learning program	Not every student is fortunate like their classmates and most of them only rely on books, that is why modular is more applicable than online learning

To investigate the relationship between students' academic success and online interaction and participation and explored their class attendance (synchronous virtual classes and/or watching the recorded virtual classes) in the online study mode of an enabling program	quantitative research	Online Survey	Academic success may be increased by providing various options for students to participate and interact online, and to attend classes synchronously or asynchronously. The flexibility of online education can enable students to be successful in their studies. The inclusion of varied activities is therefore recommended to increase academic success in online education.
To examine what undergraduate students' perceptions are concerning DE and their willingness to enroll in this type of course.	quantitative research	Online Survey	More time to read/study the lesson. It is more reliable and convenient to students who do not have gadgets.
To assess the experience of emergency remote instruction due to the COVID-19 outbreak. To assess the psychological well-being, motivation for physics, academic orientation, attitude towards physics and physicists, and tried to link these factors to their overall perception of the online instruction.	Mixed method (qualitative and quantitative)	Online survey	MDL provides greater flexibility for students to work at their own pace and review work as needed.

DISCUSSION

In recent years, one of the most practical and significant methodological breakthroughs has been the introduction of modular distance learning or online education/distance education, particularly in times of epidemic. The debut of this teaching

approach in the sphere of education, in particular, has led to a number of Higher Education instructors incorporating it into their everyday job outside of the classroom (Nieuwoudt 2020). The goal of this study was to look at the most common encounters with this approach and evaluate how it affected learners. Thus, the main findings of the study revealed that the implementation of modular distance learning or distance education resulted in a significant improvement in students' knowledge of the specific content covered, as teachers' attitudes toward using ICT in distance learning are positive, despite the fact that both technical and non-technical problems occur during their teaching in distance learning when using ICT and the flexibility of online e-learning.

As a result, this results supports prior research that has determined the efficiency of Modular Distance Learning or Distance Education in this context (Gon and Rawekar 2017) Similarly, the combined (quantitative and qualitative) nature of the technique resulted in an increase in student motivation as well as a more favorable attitude toward the material and education in general (Fidalgo et al 2020). Moreover, the improved motivation rates following the deployment of active techniques that include technology into their instructional processes, as evidenced by the scientific literature (Fitzgibbon 2003. Similarly, improvements in areas such as distant learning outside of the classroom, as well as self-directed learning, should be emphasized. Placement of part of the methodology's activity outside the classroom.

On the other hand, encourages the development of self-learning and autonomous abilities in learning. This assumption, however, cannot be fully verified, because the findings of this review revealed that, while the majority of students achieved this goal, a small group did not follow the modules and had a harder time integrating themselves into the new normal education (Jafari and Chalak 2016). In brief, the use of Modular Distance Learning or Distance Education is becoming an increasingly popular practice in the educational scene especially during this time of COVI-19 pandemic.

With the introduction of technology into the classroom, the paradigm of teaching has shifted in favor of modular and online education. One of the study's shortcomings was that it was not able to examine papers that were not open access, which reduced the number of studies in the sample to a minimal number. As a result, a portion of the scientific literature cannot be evaluated or comprehended. Future research lines, on the other hand, will continue to promote the use of the modular distance learning approach within the education branch as one of the key lines of educational innovation. In this view, the provision of excellent practices will enable instructors of all educational levels in the field of education with ideas to use modular distance learning or the distance learning in this current scenario. Each of the tables or narrative in the Results section should be discussed here including the researchers’ interpretations of the same and may also present how the results are connected with the related literature cited in the Introduction, whether they are consistent or inconsistent with previous studies.

Conclusions

In conclusion, society's rapid technological growth and limitation to internet connectivity, and hence the educational systems, has resulted in a significant shift in the teaching–learning process. Teachers must study their students' interests and motivations in order to organize their instruction when faced with a student body that is vastly different from that of a few years ago. As a result, incorporating technology into modular teaching techniques is considered as a solution that engages students, enhances interest in the subject and the information covered, and, as this study has demonstrated, improves greater knowledge acquisition and academic freedom, particularly during pandemic.

Recommendations

Based on the findings and conclusions of the study, the following recommendations are forwarded:

1. If funds are available, the College Administration may provide internet allowance to students to give them access to on line materials or references

2. Faculty members are advised to regularly update their print and online modules to keep up with developments in their respective fields.

3. Parents are encouraged to find ways and means to purchase gadgets for their sons/daughters or wards as their learning tools.

4. Students are enjoined to be always active and resourceful participants in the teaching-learning process be it on line or off line mode.

5. Further study may be conducted using quantitative methods on the effects of modular distance learning on the academic performance of students across disciplines.

Compliance with Ethical Standards

The authors declare that no conflict of interest exists in the conduct of the systematic review. Plagiarism was strictly avoided. There was no bias in the interpretation of the findings and that the results were used for research purposes only.

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MOTIVATION OF ACCOUNTING, BUSINESS AND MANAGEMENT (ABM) COLLEGE FRESHMEN STUDENTS AND ACADEMIC ACHIEVEMENT IN GENERAL EDUCATION 5

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ABSTRACT

This descriptive correlational study aimed to explore the structural relationship among the constructs of motivation and the academic achievement of Accounting, Business, and Management freshmen college students in the General Education 5 (GE 5) subject. The respondents were 140 students from the College of Accounting Education, and the College of Business and Administration Education (ABM) of the University of Mindanao. This study used the Science Motivation Questionnaire to measure the level of the constructs of motivation, and the score in the final examination to measure the level of the academic achievement of the respondents. Findings showed that ABM college freshmen were highly motivated to learn the concepts in GE 5. They see that learning the subject is meaningful, engaging, and relevant to their lives and goals. On average, ABM college freshmen have achieved the competencies set by CHED for the subject. All three core competencies in the subject were achieved by most of the students. There was no significant structural relationship between the level of motivation and the level of achievement among ABM college freshmen students in the GE 5 subject. The level of motivation has nothing to do with the scores of the respondents in their final examinations. Instructors teaching the subject are encouraged to make important modifications and adjustments in their strategies, methodologies, and approaches to raise their students' self-determination and self-efficacy.

Keywords: *Motivation, ABM college students, GE 5, Science Motivation Questionnaire, Structural Relationship*

INTRODUCTION

Ever since the first graduates of the K-12 curriculum have entered the tertiary level, college science for nonscience majors has undergone consequent changes. The purpose of these changes is to cater to the needs of the degree program so as to avoid redundancy in the topics with the senior high science. Like all minor subjects in tertiary for Accounting, Business, and Management (ABM) aligned courses, Science, Technology, and Society (General Science 5) is dealt with less priority. As a result, students are poorly motivated in learning science resulting in low academic achievement. They do not see the relevance of science to their careers.

The issue of motivation vis-à-vis academic achievement of nonscience major freshmen students in science subjects is globally widespread. Motivation has already been identified to be a key process or mechanism in science to enhance students' overall achievement (Lazowski & Hulleman, 2016). The crux of the issue is that freshmen college students are especially susceptible to the changes and conflicts that arise from motivation in learning scientific concepts that they did not study in high school or are new to them. If low motivation is left unchecked in these students, this leads to adverse outcomes in their achievements during their school career. This can trigger further low enthusiasm and a spiral downward of demoralization (Potvin & Hasni, 2014).

In the Southeast Asian region, the lack of motivation of most college students is not new to the tertiary education landscape, especially with general education subjects. According to the reports of performance in science learning in Malaysia, it is found that students' lack of motivation towards science learning has a considerable impact on students' scientific attitude and achievement overall. Poor motivation in freshmen students often leads to low achievement (Chan & Norlizah, 2017).

In the pursuit of the ongoing education reforms in the Philippines that included the shift to the K-12 curriculum, the Commission on Higher Education (CHED) has revised the General Education (GE) curriculum to expose undergraduate students to various domains of knowledge and ways of comprehending social and natural realities, developing in the process, intellectual competencies and civic responsibilities (CMO No. 20, series of 2013). This resulted in a complete overhaul of science-related subjects for nonscience major students like life sciences and physical sciences. Since the implementation of the STS under the course title General Education 5 (GE 5) is relatively in the early stage, there is now a need to study this area to improve the strategies, methodologies, instruction, and approaches in the GE 5-STS that develop and promote motivation to ensure continuous and high achievement. In addition to that, no motivational research involving nonscience major students such as ABM-aligned freshmen students has ever been conducted.

At many colleges in the Philippines, science for nonscience majors often has hundreds of students enrolled in each section, making it challenging to address the specific needs of individuals. The University of Mindanao, for example, boasts a population of more than 35,000 undergraduate students in the academic year 2018-2019. With its nine campuses and branches in Mindanao, it is not surprising just like all other tertiary level schools that not all freshmen students are allowed to learn GE 5-STS individually and to their liking.

They must be assessed on what drives them to learn subjects outside of their concentration. A shared challenge, therefore, for instructors of science at all institutions, particularly those with large enrollment classes, is to motivate nonscience majors to learn science successfully. One of the most important goals of an instructor of introductory college science courses is to help freshmen students become motivated self-learners to ensure high achievement (Glyn, Brickman, Armstrong, & Taasoobshirazi, 2011).

Science and technology are perceived as fundamental forces behind economic development in industrialized nations (Chan & Norlizah, 2017). The Philippines, as a developing country, should be prepared to join the ranks of developed nations, so students and college graduates alike need to excel in science and technology. Since the General Education – Science, Technology, and Society (GE 5-STS) curriculum is relatively new from its implementation, and not much is known about its impact on nonscience majors especially with the ABM-aligned courses, there is now a compelling reason to identify what motivates a nonscience major to learn science, technology, and society to improve the strategies, methodologies, instruction, and approaches in the said subject. To date, no motivational research involving ABM-aligned students in relation to the new GE 5-STS subject has ever been conducted. In particular, this study seeks to determine the level of the different constructs of motivations possessed by these freshmen and their achievement as they learn the lessons in the GE 5-STS. The results of this study would provide a better understanding of the motivating factors of students at the tertiary level in general. The curriculum would be streamlined and tailored if the need arises, leaning more toward the best interest of students. Furthermore, this would offer significant insights to instructors and curriculum developers for areas of improvement, revisions, or modifications to the current curriculum and trends in GE 5-STS.

Research Questions

The primary purpose of this study is to determine the level of different constructs of motivation among Accounting, Business, and Management first-year college students, who are currently enrolled in the General Education 5 curriculum at the University of Mindanao and establish a structural relationship between these constructs of motivation and their academic achievement in GE 5.

Specifically, the study aims to answer the following questions:

1. What is the level of the motivation of Accounting, Business, and Management college freshmen students in terms of:
    1.1. intrinsic motivation;
    1.2. extrinsic motivation;
    1.3. goal orientation;
    1.4. self-determination; and
    1.5. self-efficacy?

2. What is the level of academic achievement among Accounting, Business, and Management college freshmen students in General Education 5 in terms of:
    2.1. intellectual competencies;
    2.2. personal and civic responsibilities; and

2.3. application and practical skills?

3. Is there a structural relationship between the level of motivation and the level of academic achievement among Accounting, Business, and Management college freshmen students in GE 5?

The following hypothesis was tested at a 0.05 level of significance:

H0: There is no structural relationship between the level of motivation and the level of academic achievement among Accounting, Business, and Management college freshmen students in GE 5.

METHODOLOGY

The study was conducted at the University of Mindanao (UM) Bolton and Matina Campuses. These branches of the university are strategically located in the downtown area of Davao City and have the highest number of enrollees among all the branches of UM in Mindanao. The University of Mindanao was chosen because it is the largest private university in Mindanao and is hailed as the institution with the second-highest number of programs accredited by PACUCOA in the country today.

This study also used the simple random sampling method. The principle of a simple random sampling technique is that every object has the same probability of being chosen. The aim is to reduce the potential for human bias in the selection of cases to be included in the sample. As a result, the simple random sample provides us with a sample that is highly representative of the population being studied (Kuswandono, 2019). In this method, every college freshman in the research locale enrolled under the GE 5 subject has an equal chance of being included in the sample. These respondents were all enrolled in the first term of the second semester in the academic year 2019 – 2020. The respondents in this study were 140 college freshmen from the College of Accounting Education and the College of Business and Administration Education of the University of Mindanao. These students previously completed the Accounting, Business, and Management (ABM) strand in Senior High School; hence, the respondents are collectively tagged as ABM college freshmen students. Using Microsoft Excel spreadsheets, a number was assigned to their names in the class record. The software generated a number between 0 to the maximum number of students in the class record with no duplicates using the algorithm =RANDBETWEEN(0,maximum number of students + 1). To produce the respondents representing every course under the accounting, business, and management degree program, only the students with numbers 1 to 20 were selected.

Furthermore, this study used the descriptive correlational research design. Descriptive correlational research primarily aims to describe the relationship among variables rather than to infer cause-and-effect relationships (Wetherington, 2010). Using this research design, this present study is focused on describing the relationship between the constructs of motivation and the academic achievement of the respondents.

In order to guarantee systematic order in data collection, the researcher requested permission to conduct the study from the graduate school and the institution through

formal letters. The researcher administered the questionnaire in person after a brief introduction and instruction. \ The researcher reiterated the Informed Consent to all the respondents. The respondents followed the guidelines on the questionnaires. After the allotted time, the questionnaires were systematically collected by the researcher. As for the final test material, the usual protocol of the school was followed. The conduct of the final test examination and the collection of the test materials were commenced in a regular manner.

After the collection of the questionnaires and the final test material, the results were sorted and tabulated. Subsequently, the data were subjected to statistical analysis using statistical tools. The researcher interpreted the results of the statistical analysis in conjunction with the research hypothesis at a 0.05 level of significance. The structural relationship was interpreted based on the value obtained from the statistical analysis of the SEM package.

To interpret the relationship among the multiple indicators for both independent and dependent variables, Multiple Regression through Structural Equation Modeling was used. The objective of multiple regression analysis is to use the independent variables whose values are known to predict the value of the single dependent value (Cohen et al., 2013). This research design helped the researcher to establish a structural relationship among the indicators of motivation and the achievement of ABM graduates in the GE 5 subject.

In order to measure the level of motivation of the respondents, the Science Motivation Questionnaire (SMQ) by Glynn and Koballa (2006) was used. This survey questionnaire was composed of 30 questions that were grouped according to the five constructs of motivation as indicators, namely: intrinsic motivation, extrinsic motivation, goal orientation, self-determination, and self-efficacy. This was a pre-constructed questionnaire; however, to suit the purpose of the study, the responses and several words used in the items were reworded to fit the purpose of the study, such as the word “science” becoming “science, technology, and society.” The researcher sent an e-mail to the owner of the questionnaire, asking permission to use the instrument.

To ensure the reliability and suitability of the instrument, the SMQ was also validated by two experts from the panel of examiners and an external validator. The reliability test result from the Institutional Research Office of the Holy Cross of Davao College, Inc. yielded a 0.83 Chronbach’s alpha rating. Values equal to or above 0.70 correspond to acceptable internal consistency (Hoekstra et al., 2019).

On the questionnaire, students would respond to each item on a rating scale of 5 to 1: very highly motivating (5), highly motivating (4), moderately motivating (3), lowly motivating (2), or very lowly motivating (1). This questionnaire provides college instructors with a tool for efficiently gathering data that can increase the effectiveness of advisement sessions with students. It also provides researchers with an instrument for investigating students’ motivation to learn science in college courses, the relationship of motivation to other student characteristics, and the interaction of motivation with instructional methods (Glyn, Brickman, Armstrong, & Taasoobshirazi, 2011). A Likert scale was prepared to

analyze and interpret the data for the level of motivation of the respondents; the scale has an equal interval of 0.49 starting from 1.00.

In order to measure the level of achievement of ABM college freshmen students in GE-5, the score in the final examination of the respondents was used. The final test material was given in the first term of the second semester of the academic year 2019-2020 last January 16 to 17, 2020. The final examination was composed of 60 multiple-choice questions. The number of items was divided into the three core areas of competencies in the GE 5-STS subject as indicators, namely, (a) Intellectual Competencies, (b) Personal and Civic Responsibilities, and (c) Application and Practical Skills. Hence, each competency corresponded to 20 questions in the examination. These competencies are set by the CHED for the subject as part of the new curriculum for the incoming freshmen for the school year 2018-2019 and graduates of the K to 12 program of the government (CMO No. 20, s. 2013).

RESULTS

The Level of Motivation of ABM College Freshmen Students

Table 1 presents the level of motivation of the Accounting, Business, and Management (ABM) college freshmen in each of the five constructs of motivation. The data were collected using the Science Motivation Questionnaire (SMQ).

Table 1. The Level of Motivation of the Accounting, Business, and Management College Freshmen Students

	N	Mean	Level of Motivation
Intrinsic motivation	140	4.26	High
Extrinsic motivation	140	3.89	High
Goal orientation	140	3.52	High
Self-determination	140	3.31	Moderate
Self-efficacy	140	3.40	Moderate

Data from the table reveal that the level of intrinsic motivation, extrinsic motivation, and goal orientation was altogether high in 140 randomly selected ABM freshmen students. Meanwhile, their level of self-determination and self-efficacy were both moderate. In general, the results showed that the level of motivation of the majority of the freshmen students in the GE 5 - STS subject was high. In particular, among the five constructs of motivation, intrinsic motivation garnered the highest mean score of 4.26.

Level of Achievement among ABM College Freshmen Students in General Education 5 - Science, Technology, and Society

Table 2 shows the level of achievement of ABM college freshmen students obtained from the scores in their final examinations, which were subjected to statistical treatment. The data were taken from the examination results using the SEM package software.

Table 2. The Level of Achievement of ABM College Freshmen Students

	N	Mean	Level of Achievement
Intellectual Competencies	140	3.19	Moderate
Personal and Civic Responsibilities	140	2.66	Moderate
Application and Practical Skills	140	2.65	Moderate

The results show that the level of achievement of ABM college freshmen students in their final examination was at a moderate level in all three (3) core competencies in the STS subject. The highest mean was obtained from the items under Intellectual Competencies (3.19), followed by Personal and Civic Responsibilities (2.66), and Application and Practical Skills (13.26), respectively.

Structural Relationship between the Level of Motivation and the Level of Achievement among ABM College Freshmen Students in General Education 5 -Science, Technology, and Society

Table 3 shows the Structural Equation Modeling (SEM) results between the level of motivation and the level of achievement among ABM college freshmen students. All the necessary data from the SMQ and the final examination were set as inputs for the structural equation modeling (SEM) package software to determine the structural relationship between the two variables**.** The figure for structural r determines whether or not there is a significant structural relationship between the variables.

Table 3. Structural Relationship between Motivation and Achievement of the Students

Structural r	N	p-value	Decision on Ho
$-.045^{NS}$	140	.595	Accept Ho

NS - Not significant

The table shows the structural r-value of -0.045 and the p-value of 0.595, which prompts the researcher to accept the null hypothesis of this study. This means that there is no significant structural relationship between the level of motivation and the level of

achievement among ABM college freshmen students. The five constructs of motivation do not relate to the three core competencies in the GE 5 - STS.

DISCUSSION

The overall high level of motivation indicates that ABM college freshmen students responded positively to the questions that evoke motivation in learning GE 5 - STS concepts. A high level of intrinsic motivation means that ABM college freshmen students see that learning the lessons in the GE 5 - STS is meaningful, engaging, interesting, and relevant to their lives. Although the GE 5 - STS is a general education subject intended for all freshmen regardless of their degree program, freshmen students under the ABM courses nevertheless were enjoying the subject for the most part. It is inferred that these students drive themselves to learn because of the satisfaction they get to have when they participate in the GE 5 class, and the enjoyment they feel in the subject. The result generally points out that these students have the innate drive to learn the subject.

The same can be said for extrinsic motivation and goal orientation. The results mean that learning the concepts in the GE 5 is rewarding among ABM college freshmen students. They also understand that their learning in the subject relates to their personal goals and careers. A high level of both extrinsic motivation and goal orientation suggests that these students give importance to the rewards they get in learning GE 5, such as good grades in the subject, a job related to their course in science and technology, or a career in the future. It is inferred that the respondents personally believe that learning the concepts in the GE 5 - STS is valuable for their chosen career. The instrumental value of the lessons they learn at the end of the subject would heavily influence their goals. They see learning GE 5 - STS as a means to an end.

The results of this study are consistent with the findings of Libao et al. (2016), Nacionales et al. (2015), and Chan and Norlizah (2017) in that these constructs of motivation, as mentioned above, are the most fundamental processes that most students possess to drive their own learning in science subjects. Research about intrinsic and extrinsic motivation revealed that science subjects are mostly understood and appreciated better with these constructs of motivation (Ryan & Deci, 2020). The same claims are advanced in the recent study of Orhan-Ozen (2017) in that ABM-aligned students are intrinsically and extrinsically motivated to learn science. The result of this study regarding goal orientation is also similar to the findings of Glynn and his colleagues (2011), the forerunners of the SMQ. Goal orientation is also found to be high in nonscience major students taking up college science. The same observations made by Taasoobshirazi and Sinatra (2011) led to the conclusion that more often than not, college students studying science are highly goal-oriented.

As for the two constructs of motivation, namely, self-determination and self-efficacy, they were found to be at a moderate level among ABM college freshmen students. Generally, self-determination is their responsibility for learning GE 5 - STS. Self-efficacy, on the other hand, is their confidence in learning GE 5 - STS. A moderate level of self-determination means that the respondents believe that they are in control of their own learning

experience to some extent, as in the study of Bassi and Delle Fave (2012). This further implies that freshmen students under the ABM courses assume that the efforts and the time they spend studying GE 5 - STS drive them to learn, more or less. They may acknowledge their obligation to prepare and study the lessons in the subject.

Meanwhile, a moderate level of self-efficacy denotes that ABM college freshmen students are self-assured to some degree that they can achieve well in GE 5 - STS. Self-efficacy also determines what goals these students choose to pursue, long-term and short-term, and how they go about accomplishing those goals. The result also implies that they have a moderate interest in the activities and tasks in the GE 5 - STS, which they are confident of achieving. This generally points out that if students believe that they can do it, they will do it in their own capacity (Ozgen & Bindaka, 2011). A learner with a high level of self-efficacy for a given task will be resilient and persistent in the face of setbacks, while a learner with low levels of self-efficacy for that task may disengage or avoid the situation (Van Dinther et al., 2011). On average, these students believe in their capacity to understand the lessons in the GE 5 – STS.

The data indicate that, on average, the respondents have grasped and comprehended the general concepts in the GE 5 - STS subject. CHED Memo no. 20, series of 2013 had intended that students taking up the GE 5 - STS subject shall have achieved the competencies that engage students to confront the realities brought about by science and technology in society by the time they finished the subject. It is inferred that the respondents have achieved critical-thinking and analytical skills in evaluating texts, written or visual, in the GE 5 - STS more or less. Further, they have understood their civic responsibilities as demanded by the community where they live and make decisions based on moral norms and imperatives on a moderate level. The result also implies that they mostly understood basic work-related skills and knowledge as a consequence of learning GE 5 - STS concepts.

The grade of students at the tertiary level in most universities and colleges is mostly based on the student's achievement in their final examination. In turn, the level of achievement of these freshmen students in terms of their final examination could substantially affect their final grades in the subject. The number of respondents who passed or failed the GE 5 - STS final examinations was found to be 61% or 81/140, more than half of the number of respondents. As per institutional policy of the University of Mindanao, all non-laboratory 3-unit courses such as STS shall follow a based-15 grading system. Final examinations are given 30% weight in the student's final grade. Therefore, in order to pass a 60-item examination, a student must obtain a score of 43. Among those who took the exam, the highest score was 53 out of 60, or equivalent to 90.08% in the based-15 grading system. Meanwhile, the lowest score was 31 out of 60, or equivalent to 57.50% in the same grading system.

Among the respondents, only one (1) respondent failed in the GE 5 - STS subject during the whole duration of the study. By large, the score in the final examination substantially affects the final grade of the respondents, because the former is given the highest percentage in the University of Mindanao's grading system than any other component

such as quizzes or assignments. However, failure in the subject has many contributory factors such as nonsubmission of requirements, failure to participate in school activities, frequent absences, and among others. The average final grade of all the respondents was 85.63 or 2.5 in the university's grading system. The highest grade was 93 or 1.8, and the lowest grade was 73, for which a grade of 7.5 was automatically given.

These findings agreed with the results of the study by Castillo (2017) in that ABM-aligned students, such as in accounting courses, are competent generally as reflected in the current trends in their performance in the board exams and the passing rate of universities and colleges. In the study of Zhernovnikova, Nalivayko, and Chornous (2017), a moderate level of intellectual and skills competence is manifested by students who understand the meaning and the importance of an activity in which they actively participate. All of the competencies determined by the CHED in its memorandum for General Education courses are set to instill reflective knowledge in the students that they can live the good life and display ethical decision-making in the face of scientific and technological advancement (CMO no. 20, s. 2013).

The figures in the table further imply that motivation has nothing to do with the achievement of students. Although the majority of the ABM college freshmen students have obtained a passing mark in their final examinations, this does not mean that motivation played an essential role in their success in the said examination. It indicates that the moderate level of motivation did not significantly influence the scores of the students in their final examination. The core competencies set by CHED namely, intellectual competencies, civic and personal responsibilities, and skills and application, did not have a significant interdependence with the overall level of motivation of the respondents who were enrolled in the academic year 2019 to 2020.

Most of the studies show that motivation has a relationship with students' achievement (Gupta & Mili, 2016; Sikhwari, 2014; Amrai et al., 2011). In the purview of education, it has been widely known that the motivation of learners affects achievement in academics. However, the result of this research finds support with the findings of Stofile (2017) and Sarangi (2015) in that the achievement of the students has no significant relationship with their level of motivation. The uniqueness of the circumstance, the variables, and the parameters of this study may have contributed to the results.

Conclusions

Based on the findings of the study, the following conclusions are presented:

Foremost, the moderate level of motivation among ABM college freshmen students in the subject Science, Technology, and Society indicates that they see that learning the concepts, theories, history, and the lessons in the subject as a whole is stimulating and rewarding. As reflected in the level of their intrinsic and extrinsic motivation, ABM college freshmen have the innate drive already to fuel their minds to grasp the lessons. They also give importance to the external rewards they get in learning GE 5 - STS. The level of their goal orientation means that they see that GE 5 - STS lessons relate to their personal

goals, ambitions, and careers at present and in the future. Furthermore, they believe that they have control over their learning, more or less. They also have moderate confidence that they can achieve good scores and do better in every activity, assignment, and challenge in the GE 5 -STS subject.

Secondly, the moderate level of achievement among ABM college freshmen students in the GE 5 - STS subject implies that they have understood the general concepts for the subject. This means, on average, that ABM college freshmen students have achieved the competencies set by CHED. It also suggests that they have intellectual competence, civic and personal responsibilities, and skills required in the GE 5 - STS. They have attained an understanding that scientific knowledge and technological development happen in the context of a society with all its socio-political, cultural, economic, and philosophical underpinnings at play.

Thirdly, the findings supported the null hypothesis that there is no significant structural relationship between the level of motivation and the level of achievement among ABM college freshmen students. This suggests that motivation has nothing to do with the level of their achievement in the subject. It also means that motivation, as the independent variable, neither correlates nor influences the score of the respondents in their final examinations and, ultimately, their final grade in the GE 5 - STS subject. A moderate level of motivation, as a result, did not lead to a moderate level of achievement among the ABM college freshmen in GE 5 – STS. Still, the researcher believes that instructors must cultivate positive motivation in every learner in their academic endeavors.

Recommendations

Based on the findings and conclusions, the following recommendations are forwarded:

Among the five constructs of motivation, the level of intrinsic and extrinsic motivation and goal orientation was high among ABM college freshmen students. The other two constructs were moderate. From these results, instructors teaching the subject GE 5 - STS could make important modifications and adjustments in their strategies, methodologies, and approaches to raise their students' self-determination and self-efficacy. As for intrinsic and extrinsic motivation and goal orientation, instructors could also opt to sustain what they usually do in the classroom. Should they choose to make adjustments, instructors could do and adopt the following as classroom routines during the GE 5 - STS class:

(a) *Give a sense of control*. Whereas guidance from a teacher is vital to keeping students on task and motivated, allowing students to have some choice and control over what happens in the classroom is a way to keep them engaged. For instance, allowing students to choose the type of task they do or the problems they have to focus on can give them a sense of control that can only motivate them to do more. This, in turn, would raise their self-determination. Self-determination can be supported by providing opportunities for students to be challenged.

(b) *Let there be an occasional change in the learning environment*. A classroom is a usual place for learning. However, sitting at a desk day in and day out can make school start to seem a bit dull for some students. To renew interest in the subject matter, giving students a chance to get out of the classroom would keep them engaged. College students are usually in a classroom setting for a whole semester for minor subjects. GE 5 - STS is a subject that deals with not only pure science concepts but also with societal issues that overlap with the use of technology. Taking field trips, bringing in speakers, or even just heading to the library for some research would help ABM freshmen students establish their connection to the subject. The learner's brain loves novelty, and a new setting can be just what some students need to be inspired to achieve more.

(c) *Make goals high but attainable*. Students tend to stay in their own comfort zone and do not seek to push themselves on their own if nobody pushes them to do more than the bare minimum. Most students like to be challenged and will work to meet high expectations as long as goals are within their reach. Instructors should not be afraid to push students to get more out of them. ABM college freshmen students are non-science majors, so it is natural for them to see GE 5 - STS as trivial and less important to their careers. Therefore, instructors should always remind their students of the goals they have and relay how the concepts in GE 5 - STS can help to achieve them. This will help raise their self-determination and self-efficacy.

(d) *Be inspirational*. Inspirational teachers represent success to their students. Once students decide on their own success, they pay close attention to the behaviors, choices, and even sacrifices that lead to success. These behaviors include hard work, willingness to struggle, and the ability to learn from mistakes. Students internalize a teacher's behaviors, according to the Social Learning Theory of Bandura (2001), and strategies as a way to accomplish their own goals. Instructors should allow them to do so in their everyday routines, assignments, and encounters with their students. ABM college students are diverse and unique in terms of goals and motivation. GE 5 - STS curriculum developers should also incorporate more concepts of actual and daily life examples in most of the topics.

(e) *Develop meaningful and respectful relationships with students*. If teachers are going to inspire and motivate all of their students truly, they should know each of them on a personal level. Teachers need to know their interests and hobbies, whom they hang out with, their family situations, and what gets them excited. As stated, ABM college students are diverse and unique in terms of goals and motivation. They all learn differently. In each classroom, several types of learners exist: visual, tactile, verbal, and more reserved, according to Gardner in his Theory of Multiple Intelligences (1983). Each student will require different motivational strategies, and teachers will need to know them so they can predict what strategies might and could work. GE 5 - STS covers technological and societal issues. This is an essential responsibility of a GE 5 - STS instructor to discover their students' learning styles by knowing them and endeavor to teach them accordingly. This work will result in a teacher's ability to know their students, which leads to a more motivated, open learning community.

(f) *Encourage self-reflection*. Many students want to succeed; they need help figuring out what they need to do in order to get there. One way to motivate students is to get them to take a hard look at themselves and determine their own strengths and weaknesses. Determining strengths and weaknesses develops self-confidence. This process, in turn, enhances their self-efficacy. GE 5 - STS is a subject that concerns environmental dilemmas and societal conflicts with the use of technology. Instructors and curriculum developers may include activities that focus on self-reflection and self-critique in the GE 5 - STS subject. Students are often much more motivated by creating these kinds of critiques of themselves than by having a teacher do it for them, as it makes them feel in charge of creating their own objectives and goals.

In conclusion, for this study, motivation did not relate to achievement. Although educational researchers and practitioners all agree that motivation is one of the most critical factors in learning (Orhan-Özen, 2017), other latent and quantifiable factors should also be taken into consideration to measure students' overall achievement. Students who are motivated to learn will continue to be interested and pay attention. As a result, they are willing to make an effort and take the necessary time to learn, focusing and devoting to the subjects, not giving up doing required behavior under challenging circumstances, insisting on bringing it to an end, and resolutions are then observed. Based on the preceding discussion and findings, it is an absolute imperative for instructors and curriculum developers to incorporate lessons, strategies, methodologies, and approaches that develop and promote motivation and employ said contingents to ensure continuous and high achievement.

Compliance with Ethical Standards

Researchers are responsible for protecting the participants in their studies and ensuring that their research does not harm them in any way. Ethical conduct is essential for ensuring the safety and well-being of research participants (Cacciattolo, 2015). Adhering to ethical norms during the course of research is of utmost importance to uphold a study's integrity and credibility. This Ethical Consideration aligns with the mandate set forth by DOST-PHREB (DOST A.O. no. 001, s. 2007) which directs that all research involving human participants in the Philippines must undergo ethical review by an accredited Research Ethics Committee. It does this by ensuring research is conducted ethically and that the rights of human participants are protected. In addition, this study also adheres to the Data Protection Act of 2012 (RA 10173), which aims to uphold the universal ethical values that safeguard and promote the dignity of people involved in health research. Finally, to ensure full compliance with the ethical considerations set forth by the law and school policies, this study follows the guidelines of HCDC-REC following the nine elements: social value, informed consent, risks, benefits and safety, privacy and confidentiality of information, justice, transparency, qualifications of the researcher, adequacy of facilities, and community involvement.

Informed Consent provides the research respondents with the information they need to decide whether to participate in a study. This information includes the purpose of the

study, the procedures involved, the potential risks and benefits, and the participant's right to withdraw from the study at any time. In this study, the respondents were given an informed consent form, which was given to them in two copies: one personally whenever possible and the other through e-mail as a soft copy a week before the interview. This was done to give them time to think and to value their freedom to decline or withdraw. Retrieval and acknowledgment of the signed consent form would be via e-mail or in person. In the case of an e-mail, replying to the e-mail with the participant's complete name in all caps or with an e-signature would be tantamount to giving consent to participate in the study. On the other hand, a signed Informed Consent signifies voluntary participation in the study.

The researcher also ensured the anonymity of the respondents. Furthermore, the respondents' well-being was safeguarded throughout the whole duration of the conduct of the study. The researcher also ensured that there was no conflict of interest in the conduct of the study. Moreover, to avoid plagiarism, the manuscript underwent checking through online plagiarism checker software and was subsequently revised to preserve originality.

By implementing measures to safeguard the privacy and maintain the confidentiality of data, the researcher could effectively contribute to protecting research participants' safety and overall welfare. This approach also fosters trust among participants and upholds the integrity and reliability of the research outcomes. Compliant with the Data Privacy Act of 2012 (RA 10173), the researcher secured the information obtained from the respondents throughout the research.

The researcher also vowed that all the information gathered from the participants would be for research purposes only. Thus, printed and digital copies of the research materials' safety, including the responses and personal data of the participants, were ensured throughout the duration of the study. Printed materials were kept in a safety cabinet/drawer accessible only to the researcher. Digital copies were stored in a password-protected hard drive and were stored in the said cabinet/drawer. All cloud or online copies were deleted promptly after saving or printing. All password-protected copies were encrypted with symbols, upper and lowercase letters, and numbers. Upon the completion of the study, hard copies of research materials were shredded, and online data was totally removed from the hard drive through secured deletion.

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NANOTECHNOLOGY IN AGRICULTURAL CROP PRODUCTION: AN INTEGRATIVE LITERATURE REVIEW

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ABSTRACT

The application of nanotechnology in achieving food security, better nutrition, and promoting sustainable agriculture is less explored in agricultural areas while the agriculture industry is currently threatened by various factors, including changing weather patterns, natural disasters, urbanization, and population growth. As a result, innovation is becoming increasingly necessary to survive, and the advancement of nanotechnology is an essential step toward developing a technology that has the potential to address problems in agricultural crop production. To evaluate the potential of various nanotechnology applications in improving crop productivity, the researcher examined various secondary data relevant to crop production and the application of nanotechnology using an integrative literature review. Upon reviewing the uses and results of nanotechnology in crop production based on data and findings from published studies, it is discovered that nano pesticides, nano fertilizers, nanosensors, and nanotechnology for controlling plant growth and seed germination have all been found to be highly beneficial in the quest to increase crop productivity. Extensive research on various agricultural topics has shown that nanotechnology has essential potential for enhancing crop output. Applications of nanotechnology unquestionably increase crop productivity. However, their stability still needs to be taken into account in praxis.

Keywords: *nanotechnology, nano fertilizers, nanosensors, nano pesticides, nanoparticles*

INTRODUCTION

The Philippine economy has historically depended on agriculture since crop production provides the raw materials essential to the food and feed industry sectors. Many crop production efforts have been made across the country to support family consumption and industry production, such as energy-efficient sustainable crop production (Gathala et al., 2020), straw management practices (Guan et al., 2020), climate-smart farming systems in high and low-input crop production (Richard et al., 2021), management of soilborne diseases (Panth, 2020), and other sustainable land management practices in extreme weather (McCarthy et al., 2021). In the agricultural sector, small-scale farmers are found to be reliant on conventional subsistence farming methods. Despite the efforts of government agencies, institutions, and non-governmental organizations to provide extension services, these farmers have yet to be successful in embracing new agricultural technologies.

The majority of small and marginalized farmers have remained technologically outdated and economically powerless due to (1) low investment in research and development, (2) inadequate education, and (3) ineffective transfer of agricultural technologies. With the increasing population, the Philippines may need help to produce or import food and products to meet the needs of the people. Thus, our country necessitates a robust and highly productive agricultural sector. The strength and productivity lie in the empowerment of the farmers and the promotion of agricultural technologies to enable our country to become highly competitive in the international market. The call for agricultural innovation became the center-shift for sustainable development; however, nanotechnology, which increases the quality and safety of food, including the technical capacity inputs of agricultural less soil by using nutrients management, is not widely employed in the Philippines due to a lack of broad implementation and support (Xiong et al., 2020).

Nanotechnology is a science, engineering, and technology conducted at the nanoscale, about 1 to 100 nanometers. To create structures, devices, and systems with at least one novel or superior characteristic or property, size, and shape at the nanoscale (atomic, molecular, and macromolecular) scale must be carefully manipulated during the design, characterization, production, and application phases. It primarily entails processing material consolidation, separation, and deformation by a single atom or molecule. To fully harness the unique quantum and surface phenomena that matter shows at the nanoscale, it enhances current industrial processes, materials, and applications by scaling them down to the nanoscale (Malik et al., 2023). Moreover, nanotechnology has the potential to revolutionize agriculture and food systems since the agricultural system has been facing many challenges with the growing population and the adverse effects of climate change.

Nonetheless, it is gaining much attention due to its expanding potential applications. In agriculture, ongoing research is on single molecule detection to determine

enzyme/substrate interactions, nanocapsules for delivery of pesticides, fertilizers, and other agrichemicals more efficiently, delivery of growth hormones, nanosensors for monitoring soil conditions and crop growth, nanochips for identity preservation and tracking, nanosensors for detection of animal and plant pathogens, nanocapsules to deliver vaccines, and nanoparticles to deliver DNA to plants (targeted genetic engineering).

Recently, nano biosensors, nano fertilizers, and nano pesticides are some of the applications of nanotechnology that are still being critiqued and have the potential to achieve a food-secure world. With these, the study aims to identify some of the nanotechnology applications to crop production and assess their potential for improving crop productivity by collecting and analyzing the findings of related studies.

Research Questions

In relevance to crop production and the application of nanotechnology, the researcher aims to assess the potential of various nanotechnology applications in crop productivity improvement.

Specifically, the study aims to answer the following research questions:

1. What are the different applications of nanotechnology in crop production?
2. What is the significance of nanotechnology applications to crop production?
3. What studies have been done that signify the potential of nanotechnology applications in crop production?

METHODOLOGY

The researcher used an integrative literature review (De Souza, 2010) to attempt to synthesize the collected research findings and data and to contrive the main idea of this study—the overall evaluation of nanotechnology and its applications in crop production. The emphasis of this design was the fitting and adequate description of the information gathered rather than judging or interpreting. Also, it aided in providing explanations to the questions laid out and validation of the various research findings. Altogether, a hypothesis was extracted from the analysis to conclude the main idea and support the objectives of this study.

RESULTS

Table 1. *Articles surveyed in the databases on nanotechnology, nano fertilizers, nano pesticides, nanosensors*

Area	Title of the article	Author	Journal (Volume, number, page, and year)	Considerations/Subject
Nanotechnology	Nanotechnology in Agriculture: Which Innovation Potential does it have?	Fraceto, L., Grillo, R., Medeiros, G., Scognamiglio, V., Rea, G. and Bartolucci, C.	Frontiers in Environmental Science, 4, 2016	It presents recent trends in nanomaterial-based systems and nanodevices engineered for controlled nutrient, pesticide, and fertilizer release in crops that could benefit sustainable intensification and soil and waste management.
	Nanotechnology in Sustainable Agriculture: Recent Developments, Challenges, and Perspectives	Prasad, R., Bhattacharyya, A. and Nguyen, Q.	Frontiers in Microbiology, 8, 1-2, 2017	It reviews the role of nanotechnology in enhancing agricultural advancements despite the existing challenges on sustainability, food security, and climate change.
	Nanotechnology: The new perspective in precision agriculture	Duhan, J., Kumar, R., Kumar, N., Kaur, P., Nehra, K. and Duhan, S.	Biotechnology Reports, 15, 11-23, 2017	It discusses nanotechnology's potential applications and benefits in precision agriculture, emphasizing nanoparticle-mediated delivery to plants.
	Trends in nanotechnology in the Philippines and Laos agricultural industry	Xiong, L., Concepcion, R., Santos, G., Gonzaga, J., Lim, J. and Dadios	HNICEM, 1-6, 2020	It explores nanotechnology trends as a modern agricultural innovation in the vegetable sustainable industry, healthy lifestyle, and take-off of the amount of fertilization, chemicals, and increased yield via nutrient solution.
	Nanoparticle-Based Sustainable Agriculture and Food Science: Recent Advances and Future Outlook	Mittal, D., Kaur, G., Singh, P., Yadav, K. and Ali, SA.	Frontiers in Nanotechnology, 2, 2020	It emphasizes the importance of nanotechnology in enhancing plant health and soil quality, improving disease resistance, crop yield, and nutrient absorption.
	Coping with the Challenges of Abiotic Stress in Plants: New Dimensions in the Field Application of Nanoparticles	Rajput, V.D., Minkina, T., Kumari, A., Harish, Singh, V.K., Verma, K.K., Mandzhieva, S., Sushkova, S., Srivastava, S., Keswani, C	Plants, 10, 2021	It is an analysis providing a comprehensive understanding of the mechanism of nanoparticle application in alleviating abiotic stresses in plants, hefty metals, salinity, and drought.
	Nanotechnological Interventions in Agriculture	Ahmad, Z., Tahseen, S., Wasi, A., Ganie, I.B., Shahzad, A., Emamverdian, A., Ramakrishnan, M. and Ding, Y.	Nanomaterials, 12, 2022	It provides information into leveraging plant nanotechnology to improve agricultural production vis-à-vis nanoparticles and the influence of nanotechnology in plant growth, development, pathogen detection, and crop protection, its role in the delivery of genetic material, plant growth regulators and agrochemicals and its role in genetic engineering.
	Role of Nanoparticles in Enhancing Crop Tolerance to Abiotic Stress: A Comprehensive Review	El-Saadony, M.T., Saad, A.M., Soliman, S.M., Salem, H.M, Desoky, E.M., Babalghith, A., El-Tahan, A., Ibrahim, O., Ebrahim, A., Abd El-Mageed, T.,	Frontiers of Plant Science, 13, 2022	It reviews the positive impacts of nanoparticles in sustainable agriculture as a practical tool to enhance crop yield and alleviate the harmful effects of abiotic stresses in crops.

		Elrys, A., Elbadawi, A., El-Tarabily, K. and AbuQamar, S.		
	Multifaceted Role of Nanomaterials in Modulating In Vitro Seed Germination, Plant Morphogenesis, Metabolism and Genetic Engineering	Pathak, A., Haq, S., Meena, N., Dwivedi, P., Kothari, S.L., Kachhwaha, S	Plants, 12, 2023	Studies demonstrating the influence of nanoparticle treatments on seed germination, morphogenesis in vitro, and secondary metabolite levels assess the efficiency of nanoparticles in the genetic engineering of plants for safer gene delivery and for achieving transgenesis.
	The Role of Nanoparticles in the Response of Plants to Abiotic Stress at Physiological, Biochemical, and Molecular Levels	Al-Khayri, J.M., Rashmi, R., Surya Ulhas, R., Sudheer, W.N., Banadka, A., Nagella, P., Aldaej, M.I., Rezk, A.A.-S., Shehata, W.F., Almaghasla, M.I.	Plants, 12, 2023	It highlights both the capacity of nanoparticles to protect crop plants from diverse abiotic challenges such as salinity, high and low temperatures, heavy metals, and water scarcity and the mechanisms by which nanoparticles accumulate in plants.
Nanofertilizers	Effect of nanoscale zinc oxide particles on the germination, growth, and yield of peanut	Prasad, T.N.V.K.V., Sudhakar, P., Sreenivasulu, Y., Latha, P., Munaswamy, V., Raja Reddy, K., Sreeprasad, T.S., Sajanlal, P.R., and Pradeep, T.	Journal of Plant Nutrition, 35, 2012	It studies the effects of nanoscale zinc oxide particles on seed germination, seedling vigor, plant growth, flowering, chlorophyll content, pod yield, and root growth, which proved effective in increasing plant stem and root growth.
	Effects of Magnetite Nanoparticles on Soybean Chlorophyll	Mohammad, G.H., Mohammad, M.J., and Mohammad, D.R.	Environmental Science & Technology, 47, 2013	It reports on the impact of superparamagnetic iron oxide nanoparticles (SPIONs) on soybean plants cultivated in a nanoparticle solution, which observed that it may affect the soybean chlorophyll content, potentially influencing biochemical and enzymatic efficiency during various stages of photosynthesis reactions.
	Effect of cerium oxide nanoparticles on the quality of rice (*Oryza et al.*) grains	Rico CM, Morales MI, Barrios AC, McCreary R, Hong J, Lee WY, Nunez J, Peralta-Videa JR, Gardea-Torresdey JL	Journal of Agricultural and Food Chemistry, 61, 47, 2013	This studies the quality of rice grains harvested from plants grown in soil treated with cerium oxide nanoparticles (nCeO2). The findings suggest that nano cerium oxide (nCeO2) may adversely affect the quality of rice.
	Synthetic apatite nanoparticles as a phosphorus fertilizer for soybean (*Glycine max*)	Liu, R., Lal, R.	SCIENTIFIC REPORTS, 4, 2014	Using apatite nanoparticles as a novel type of phosphorus fertilizer could improve agricultural yield by increasing growth rate and above-ground biomass production and lowering the risk of water eutrophication.
	Nanofertilizer use for sustainable agriculture: Advantages and limitations	Zulfiqar F, Navarro M, Ashraf M, Akram NA, Munné-Bosch S.	Plant Science, 289, 2019	This study signifies that nano fertilizers show potential in nutrition management by significantly boosting nutrient use efficiency through binding nutrients, either individually or in combinations, to nano-dimensional adsorbents, releasing them slowly compared to traditional fertilizers, which not only enhances nutrient utilization but also minimizes leaching into groundwater.
	Can Nanofertilizers Mitigate Multiple Environmental Stresses for Higher Crop Productivity?	Shalaby, T.A., Bayoumi, Y., Eid, Y., Elbasiouny, H., Elbehiry, F., Prokisch, J., El-Ramady, H. and Ling, W.	Sustainability, 14, 2020	It reviews the potential of nano fertilizers as an essential source of fertilizers, which can improve crop production, compared to traditional chemical fertilizers, and the role of nano fertilizers for plants under biotic and abiotic stresses.

	Efficacy of nanoparticles as nano fertilizer production: a review	Fatima F, Hashim A, Anees S.	Environmental Science and Pollution Research, 2, 2021	This review highlights the potential of nanofertilizers, addressing environmental and safety concerns. It also explores the introduction of various nanoparticle forms in agriculture, paving the way for nanotechnological advancements in farming.
	Urea-functionalized amorphous calcium phosphate nano fertilizers: optimizing the synthetic strategy towards environmental sustainability and manufacturing costs	Carmona, F.J., Dal Sasso, G., Ramírez-Rodríguez, G.B., Pii, Y., Delgado-López, J.M., Guagliardi, A., and Masciocchi,N.	Scientific Reports, 11, 2021	It reports on the promising features shown by Amorphous Calcium Phosphate (ACP) as a platform for multi-nutrient nano fertilizers, which then serve as a basis for developing an efficient method to incorporate urea-based N-macronutrients into ACP, which provides greater N-payloads, significantly higher efficiency (namely, use of 16.5 times less urea), and a doubled space–time yield.
	A novel P nano fertilizer does not impact soil microbial communities or activity.	Ciurli, A., Giagnoni, L., Pastorelli, R., Sega, D., Zamboni, A., Renella, G., Varanini, Z.	Applied Soil Ecology, 178, 2022.	It evaluates the effects of a new phosphorus nano fertilizer (P-NF) on phosphorus solubility, microbial toxicity, soil respiration rate, soil enzyme activity, and the composition of soil microbial communities. The newly tested phosphorus nano fertilizer (P-NF) could be utilized safely in agricultural practices.
	Nanofertilizers: A Smart and Sustainable Attribute to Modern Agriculture.	Nongbet, A., Mishra, A.K., Mohanta, Y.K., Mahanta, S., Ray, M.K., Khan, M., Baek, K.-H., Chakrabartty, I.	Plants, 11, 2022	This review presents the impact of nanoparticles that vary with the plant type and are influenced by their application, size, shape, and concentration. It shows that crop production can be significantly increased once the optimal dosage and plant requirements for nanofertilizers are established. It also suggests that future crop plants could significantly profit from environmentally friendly nano nutrition, particularly considering the recognized nanotoxicological impacts of nanomaterials and nanoparticles.
Nanopesticides	Antifungal Effects of Silver Nanoparticles (AgNPs) against Various Plant Pathogenic Fungi	Kim, SW., Jung, J.H., Lamsal, K., Kim, YS., Min, J.S., and Lee, Y.S.	Mycobiology 40, 53-58, (2012)	It studies the efficacy of silver compounds for use in controlling plant pathogens in which the inhibition effect of three different AgNPs (WA-CV-WA13B, WA-AT-WB13R, and WA-PR-WB13R) against various plant pathogenic fungi in vitro is examined.
	Development of a new method to prepare nano-/microparticles loaded with extracts of *Azadirachta indica*, their characterization, and use in controlling *Plutella xylostella*	Forim, M.R., Costa, E.S., da Silva, M.F., Fernandes, J.B., Mondego, J.M., Boiça Junior, A.L.	Journal of Agricultural and Food Chemistry,61, 38, 2013	It introduces a novel approach for creating nanoparticles containing neem *Azadirachta indica* extracts, demonstrating complete larval mortality in *Plutella xylostella*.
	Nanopesticides: Guiding Principles for Regulatory Evaluation of Environmental Risks	Kookana, R.S., Boxall, A., Reeves, P., Ashauer, R., Beulke, S., Chaudhry, Q., Cornelis, G., Fernandes, T., Gan, J., Kah, M., Lynch, I., Ranville, J., Sinclair, C., Spurgeon, D., Tiede, T., and Van den Brink, P.	Journal of Agricultural and Food Chemistry, 62, 2014	As nano pesticides offer a promising advancement due to their enhanced efficacy and potential for safeguarding the environment and human health, this review examines current approaches for environmental risk assessment of pesticides in which their environmental behavior and effects may vary from traditional pesticides. It also explores potential adjustments to assessment tests and procedures, covering aspects like analysis, environmental fate, exposure assessment, ecotoxicity, and risk evaluation in aquatic and terrestrial ecosystems.
	Nanopesticides and Nanofertilizers: Emerging Contaminants or Opportunities for Risk Mitigation?	Kah, M.	Frontiers in Chemistry, 3, 64, 2015	It evaluates the future of nano agrochemicals as a potential source of emerging solutions to mitigate pesticide contamination.

	Biosynthesized silver nanoparticles as a nano weapon against phytopathogens: exploring their scope and potential in agriculture	Mishra, S., Singh, H.B.	Applied Microbiology Biotechnology, 99, 3, 2015	It highlights the potential utilization of silver nanoparticles (AgNPs) in agriculture, particularly for managing plant diseases, the interactions of AgNPs with the agricultural environment, including soil, soil organisms, and plants, with a focus on mitigating factors contributing to toxicity, and the significance of employing microbes and plants for AgNPs synthesis instead of relying on chemical methods.
	Nanoencapsulation, Nano-guard for Pesticides: A New Window for Safe Application	Nuruzzaman, M., Rahman, M.M., Liu, Y., Naidu, R.	Journal of Agricultural and Food Chemistry, 64, 7, 2016	It reviews how nanoencapsulation techniques with slow-releasing properties and enhanced solubility, permeability, and stability can improve the delivery of pesticides.
	Zein Nanoparticles as Eco-Friendly Carrier Systems for Botanical Repellents Aiming Sustainable Agriculture	Oliveira, J.L., Campos, E.V.R., Pereira, A.E.S., Pasquoto, T., Lima, R, Grillo, R., Andrade, D.J., Santos, F.A.D., Fraceto, L.F.	Journal of Agricultural and Food Chemistry, 66, 6, 2018	It evaluates the phytotoxicity, cytotoxicity, and insect activity of the nanoparticles toward target and nontarget organisms by using zein nanoparticles loaded with the main constituents of the essential oil of citronella (geraniol and R-citronellal).
	Advances in Biopolymeric Nanopesticides: A New Eco-Friendly/Eco-Protective Perspective in Precision Agriculture	Kumar, R., Kumar, N., Rajput, V.D., Mandzhieva, S., Minkina, T., Saharan, B.S., Kumar, D., Sadh, P.K., Duhan, J.S.	Nanomaterials, 12, 2022	It provides an in-depth examination of the toxicity and release characteristics of biopolymeric nanopesticides designed for precise delivery in crop protection strategies.
	Aggregation, Sedimentation, and Dissolution of Cu(OH)2-Nanorods-Based Nanopesticide in Soil Solutions	Xu, Z.; Tang, Q.; Hong, A.; Li, L	Nanomaterials, 12, 2022	It focuses on the role of Cu(OH)2 nano pesticide in the soil environment, which is necessary for the risk assessment of nanomaterials-based agrochemicals.
	Advanced nano pesticides: Advantage and action mechanisms	Li, X., Chen, Y., Lynch, I., Guo, Z., Xie, C., Zhang, P.	Plant Physiology Biochemistry 203, 2023	It provides an overview of the advantages and effects of nanoparticles compared to conventional pesticides, examining the formation and functions of nanoparticles in terms of structure, active ingredients, and additives, and describes the mechanism of action of nanoparticles.
Nanosensors	Implications of Nanobiosensors in Agriculture	Rai, V., Acharya, S., Dey, N.	Journal of Biomaterials and Nanobiotechnology, 3, 2012	It investigates how nano biosensors can contribute to sustainable agriculture by improving crop productivity as a tool for detecting a diverse range of fertilizers, herbicides, pesticides, insecticides, pathogens, moisture levels, and soil pH.
	Nanosensor Technology Applied to Living Plant Systems	Kwak, S.Y., Wong, M.H., Lew, T.T.S., Bisker, G., Lee, M., Kaplan, A., Dong, J., Liu, A.T., Koman, V., Sinclair, R., Hamann, C., Strano, M.	Annual Review of Analytical Chemistry, 10, 2017	It explores how nanosensors can be applied to various aspects of plant biology, including nutrient management, disease assessment, food production, detection of DNA proteins, and the regulation of plant hormones.
	Nanobiotechnology approaches for engineering smart plant sensors.	Giraldo, J.P., Wu, H., Newkirk, G.M., Kruss, S.	Nature Nanotechnology,14, 6, 2019	It offers a comprehensive perspective on the potential of nanotechnology to facilitate the development of intelligent plant sensors that communicate with and control electronic devices for monitoring and optimizing individual plant productivity and resource use.
	Monitoring Plant Health with Near-Infrared Fluorescent H2O2 Nanosensors	Wu, H., Nißler, R., Morris, V., Herrmann, N., Hu, P., Jeon, S.J., Kruss, S., Giraldo, J.P.	Nano Letters, 20, 4, 2020	It investigates the utilization of near-infrared (nIR) fluorescent single-walled carbon nanotubes (SWCNTs) interfaced with Arabidopsis thaliana plant leaves to detect initial signs of plant stress to enhance human understanding of plant stress communication,

				to provide innovative tools for precision agriculture, and refine the application of agrochemicals in the environment.
	Contributions of Nano Biosensors in Managing Environmental Plant Stress Under Climatic Changing Era	Kordrostami, M., Mafakheri, M., Al-Khayri, J.M.	Nanobiotechnology, 117–137, 2021	It provides an overview of recent developments in nano biosensors aimed at advancing global food security as the effects of climate change become increasingly evident.
	A Review on Biosensors and Nanosensors Application in Agroecosystems	Sharma, P., Pandey, V., Sharma, M.M.M., Patra, A., Singh, B., Mehta, S., Husen, A.	Nanoscale Research Letters, 16, 1, 2021	It reviews various bio and nanosensors used to monitor agricultural ecosystems and underscores the factors influencing the transition of nanosensors from proof-of-concept to commercialization.
	Carbon-Based Nanomaterials for Sustainable Agriculture: Their Application as Light Converters, Nanosensors, and Delivery Tools	Zhu, L., Chen, L., Gu, J., Ma, H., Wu, H.	Plants, 11, 511, 2022	It discusses how carbon-based nanomaterials are crucial in boosting food production and supporting agricultural sustainability, focusing on their roles as biosensors, carriers, and light converters.
	Nanosensor Applications in Plant Science	Shaw, D.S., Honeychurch, K.C.	Biosensors (Basel), 24,12, 9, 2022	It studies the various applications of nanosensors in plants, which have become crucial instruments for observing biological activities like plant signaling pathways and metabolism in ways that are non-destructive, minimally invasive, and offer real-time analysis capabilities.
	Potential of nano biosensor in sustainable agriculture: the state-of-art	Mondal, R., Dam, P., Chakraborty, J., Paret, M.L., Katı, A., Altuntas, S., Sarkar, R., Ghorai, S., Gangopadhyay, D., Mandal, A.K., Husen, A.	Heliyon, 8, 8, 12, 2022	It explores the different types of nano biosensors tailored to specific applications in the agricultural sector, highlighting their potential to revolutionize conventional farming practices by facilitating the early detection and management of various abnormalities in crops and soil.
	Nanobiosensors and nanoformulations in agriculture: new advances and challenges for sustainable agriculture	Miguel-Rojas C, Pérez-de-Luque A.	Emerging topics in life sciences, 7, 229–238, 2023	It provides a summary of the latest creative applications of nano fertilizers and nano biosensors in agriculture, which can enhance crop protection and productivity while mitigating the adverse environmental effects associated with agricultural practices.

Table 2. *Synthesis of uses, results, interpretation of nanotechnology, nano fertilizers, nano pesticides, nanosensors*

Synthesis	Uses	Result	Interpretation
Nutrition management through nano fertilizers	It increases nutrient use efficiency by enhancing plant nutrient uptake. It also resists degradation by hydrolysis, photolysis, evaporation, microbial organism decomposition, and weathering.	“Nanoparticles' high specific surface area, high stability, and excellent biocompatibility provide N.P. fertilizer composites with increased release efficiency. One study shows that urea-hydroxyapatite (H.A.) N.P.s have exhibited great potential for prolonging the release time and reducing the consumption of nitrogen fertilizers. Urea obtains the advantages of N.P.s by interacting with amine and carbonyl	It can improve plant nutrition by promoting fertilizer absorption and increasing crop yields. It can also facilitate nutrient uptake through encapsulating fertilizers with nanoparticles as these are hardly damaged by environmental factors such as rain and wind and are easily transferred into plant cells. The size distribution of N.P.s is an effective parameter related to fertilization

		groups of HA NPs. Field trial data have shown that compared with pure urea, nanohybrids of urea and Hydroxyapatite increase agronomic nitrogen use efficiency by approximately 30%. Another instance is the loading of N, P, and K into chitosan N.P.s, which increases the acquisition of N, P, and K by 17.04%, 16.31%, and 67.50%, respectively, compared to untreated control in cultured coffee plants."	efficiency. Interestingly, nanotype fertilizers all have decreased particle sizes and increased numbers of particles per unit, leading to high specific surface areas. Increased interaction with leaves and roots enables plants to better absorb fertilizers. In addition, the unique properties of N.P.s lead to enduring effects.
Advancing pest control through nanopesticides	Nanopesticides are used to treat pest-related diseases and control weeds. It is also used to decrease herbicide residues in the environment and increase weed control efficiency.	"It decreases chemical pesticide doses, increases crop production, and promotes sustainable development. Nanotype insecticides are more efficient at killing pests and less likely to cause side effects on humans. One instance is spinosad- and permethrin-loaded chitosan N.P.s applied to fruit fly *Drosophila melanogaster* displayed reinforced bioavailability even at lower doses than free spinosad and free permethrin, and the nanocomposites caused decreased damages to humans and the ecological environment. Among various kinds of N.P.s, solid lipids are the most suitable nanocarriers for nanoherbicides due to their excellent chemical stability and simple metabolism. Another instance is the foliar application of metsulfuron methyl-loaded polysaccharide N.P.s to weeds growing in wheat, which significantly decreases the weed biomass compared with the average herbicide. Moreover, the cytotoxicity of nano herbicides and traditional herbicides was also detected by incubation with cells, and the results showed that herbicide-loaded N.P.s were less toxic than regular herbicides."	It can aid in pest control populations by amplifying the advantages of sex pheromones as the case of methyl eugenol-loaded nanogels applied to guava orchards increased the number of trap catches compared with the control group containing only methyl eugenol. Regarding crop production, nano pesticides play a significant role in increasing the activity of insecticides and decreasing toxicity towards humans by having stability and a slow release capacity upon encapsulation by N.P.s. counterparts. In addition, they have concentrated particle size distributions and large specific surface areas, which improve antifungal activity and prolong fungicide release times. Nanopesticides have been promising management tools to prevent viral invasion in different ways, such as by interacting with nucleic acids, triggering plant immune responses, and delivering RNA interference systems.
Stabilizing plant growth and development through nanosensors	They are involved in nutrient management, growth monitoring, pest and disease assessment, soil conditions detection, food production, and plant hormone detection. Nanosensors constitute a new platform for monitoring plant growth and development, which achieves non-destructive and accurate monitoring and can be applied to individual plants in real time. They are used in living plants as plant signals, growth, and stress sensors.	"These are significant in plant disease diagnosis, particularly when monitoring plant health and taking immediate defensive actions. Nanosensors assist researchers in recognizing plant pathogens promptly. Targets of plant disease are identified by nanosensors, including DNA, protein, and volatile organic compounds (VOCs). One example is when compared with the standard polymerase chain reaction method, the SERS-recombinase polymerase amplification (RPA) method is more sensitive and had a lower limit of detection in recognizing three essential plant pathogens, Gray mold *Botrytis cinerea*, Bacterial canker *Pseudomonas syringae* and Fusarium wilt of banana *Fusarium oxysporum*. Another example is the use of flexible electronic sensing devices developed to continuously monitor water transportation, sap flow, and nutrient distribution. Applying this nanosensor to watermelon revealed a day/night shift in water distribution between fruits	Nanosensors help monitor plant health at the molecular level, which dramatically increases the efficiency of plant management through multiple plant signaling molecules such as phytohormones and the emergence of wearable plant nanosensors for monitoring plant growth parameters; however, the stability of these nanosensors still needs to be considered more when leveraged in agricultural systems.

		and leaves through monitoring water transportation and distribution are significant biological signs of progress in plant growth and development."	
Nanotechnology for Seed Germination and Plant Growth Regulation	It is used in various aspects of agricultural production, such as seed germination and plant growth, to increase crop yields and quality.	"Seed germination is related to antioxidant enzyme activities and the contents or utilization rates of water and oxygen, such as that of the study in which Au NPs significantly increased the germination rate of pearl millet compared to that of untreated plants. The seed germination rate of wheat treated with ZnO N.P.s was increased compared with that of the control group. N.P.s, as shown in other studies such as CNTs, silicon dioxide (SiO_2) N.P.s, ZnO N.P.s, titanium dioxide (TiO_2) N.P.s, and even gold (Au) N.P.s, have positive effects on seed germination in crop plants, including tomato, wheat, rice, pearl millet, soybean, barley, and maize. Seed germination is related to antioxidant enzyme activities and the contents or utilization rates of water and oxygen. Both NPs mentioned above can increase antioxidant enzyme activity. TiO_2 NPs are beneficial to promoting seed germination, and exogenous treatment with TiO_2 NPs enhances the seed's absorption of water and oxygen, leading to decreased germination time. For instance, tomato seeds soaked with TiO_2 NPs exhibited a germination percentage increase of approximately 8% compared with the untreated control. Another study has revealed that TiO_2 NPs stimulate seed germination and dramatically decrease mean germination time in wheatgrass. Moreover, nonmetallic N.P.s such as multiwalled carbon nanotubes (MWCNTs) can promote seed germination in different crops by increasing the seed water assimilation capability. Air-spraying MWCNTs on soybean, barley, and corn seeds successfully increased the seed germination rate by at least 25% compared with the untreated control."	Nanoparticles can promote the growth, photosynthesis, and yield of many crop species, such as maize and soybean. It can also contribute to the acceleration of plant growth by mediating crop antioxidant enzyme activity. It can also influence plant cell morphology and improve the cell's protein and organic compounds content. However, instances may occur, such as N.P.s inducing intracellular oxidative stress and genetic damage, leading to reduced crop yields and physiological disorders when applying high concentrations of N.P.s. Hence, the safest doses of various N.P.s for different crop species must be determined.

DISCUSSION

The four (4) syntheses below show an in-depth discussion of Table 2 on *uses, results, and interpretations of nanotechnology nano fertilizers, nano pesticides, and nanosensors,*

Synthesis 1: *Nutrition management through nano fertilizers*

Nanofertilizers are nanomaterials that provide nutrients to plants to enhance their growth and health, allowing the nutrients to be released into the soil in a gradual and controlled way and preventing water resource pollution compared to traditional fertilizers. These have unique features like ultrahigh absorption, increase in production, photosynthesis, and significant expansion in the leaves' surface area. Nanomaterials can encapsulate nutrients in nano fertilizers, be coated with a thin protective film, or be delivered as emulsions or nanoparticles (Berger, M., 2021).

The advantages of nano fertilizers include increased efficiency of their constituents, lower soil toxicity, and a reduced frequency of fertilizer application. Maize treated with nanoparticles of titanium oxide (TiO2) showed improvements in growth, whereas maize treated with TiO2 in bulk had no significant changes8). Another example is soybeans treated with silicon oxide (SiO2) and TiO2 nanoparticles to improve nitrate reductase activity and increase plant absorption capacity. Three types of nutrients are delivered by nano fertilizers: macronutrients, micronutrients, and nanoparticles. Macronutrients are needed in large quantities and are vital for plant growth. The macronutrient fertilizer requirement will increase as the demand for food production increases. The fertilizer requirement will be up to 263 MT by 20509). Nitrogen, phosphorus, potassium, magnesium, sulfur, and calcium are essential macronutrients for plant growth10). The high-volume-to-surface ratio of macronutrient nano fertilizers reduces the amount needed and increases the efficiency compared to traditional fertilizers (Berger, M., 2021).

The use of nano fertilizer leads to increased efficiency of the elements, reduces the toxicity of the soil to at least reaches the adverse effects caused by the excessive consumption of fertilizers, and reduces the frequency of application of fertilizers. Nanobased slow-release or C.R. fertilizers can increase the efficiency of nutrient uptake. Engineered nanoparticles help mitigate the chronic problem of moisture retention in arid soils and enhance crop production by increasing the availability of nutrients in the rhizosphere. Improving production has been observed through the foliar application of nanoparticles as fertilizer. The positive morphological effects included enhanced germination percentage and rate; length of root and shoot and their ratio; and vegetative biomass of seedlings in many crop plants, including corn, wheat, ryegrass, alfalfa, soybean, rape, tomato, radish, lettuce, spinach, onion, pumpkin and cucumber. Many physiological parameters, such as enhanced photosynthetic activity and nitrogen metabolism, are enhanced by metal-based nanomaterials in a few crops, including soybean, spinach, and peanut (Sekhon, B., 2014).

Synthesis 2: *Advancing pest control through nano pesticides*

In recent years, nanomaterials have been considered an alternative solution to control plant pathogens. Agricultural practices usually include systematically applying a wide array of active compounds at variable dosages and frequencies, representing a wide range of selective regimes. Insect pests are a predominant issue in agriculture, making nanopesticides a key player in controlling insect pests and host pathogens. Recently, a nanoencapsulated pesticide formulation was developed. This type of pesticide has slow-

releasing properties with enhanced solubility, specificity, permeability, and stability. The properties of the nanopesticide are kept intact by protecting the active ingredients in the capsule from premature degradation or by enhancing their pest control efficacy for a more extended period (Prasad, R., 2017). The recent development of a nanoencapsulated pesticide formulation has slow-releasing properties with enhanced solubility, specificity, permeability, and stability. These assets are mainly achieved by protecting the encapsulated active ingredients from premature degradation or increasing their pest control efficacy for longer. The formulation of nanoencapsulated pesticides led to a reduction in the dosage of pesticides and human beings' exposure to them, which is environmentally friendly for crop protection. Microencapsulation-like nanoencapsulation is used to develop the quality of products of desired chemicals delivered to the target biological process (Prasad, R., 2017). Nanopesticides such as Ag, Cu, SiO2, ZnO, and nanoformulations show better broad-spectrum pest protection efficiency in comparison with conventional pesticides. Development of these non-toxic and promising pesticide delivery systems for increasing global food production while reducing the negative environmental impacts on ecosystems.

Biotic factors also largely influence crop productivity, including pests and diseases. Farmers have been heavily reliant on pesticides to minimize crop losses, which adversely affect human health and environmental sustainability. However, recent studies have shown that nanopesticides could reduce the risks of pests and diseases, thereby minimizing the severity of yield losses and ecological hazards (Shang et al., 2019). Indeed, in recent years, nanomaterials have been considered an alternative solution to control plant pathogens. Researchers have made significant efforts toward the synthesis of nanoparticles through various means, including physical, chemical, and biological methods. Green methods for synthesizing nanoparticles with plant extracts are advantageous as they are simple, convenient, environmentally friendly, and require less reaction time. Nanomaterials prepared by eco-friendly and green methods may increase agriculture's potential for improving fertilization, plant growth, and pesticides. In addition, this technology minimizes the amount of harmful chemicals that pollute the environment. With the growing need to reduce the use of environmentally risky substances, such as insecticides, the biosynthesis of nanoparticles, an emerging highlight of the intersection of nanotechnology and biotechnology, has received increasing attention. The reduction rate of metal ions using plants is much faster than microorganisms and stable formation of nanoparticles. Nanopesticides such as antimicrobial agents and nanofungicides can be utilized to control plant pests and even plant viruses. Nanopesticides have a practical impact on plant growth and molecular farming with the help of nano vectors, hoping to replace viral vectors (Ghidan, A., 2020).

Synthesis 3. *Stabilizing plant growth and development through nanosensors*

Nanosensors are devices that respond to small environmental changes and convert them into proper forms of information. Nanobiosensors is a modified version of a biosensor which may be defined as a compact analytical device/ unit incorporating a biological or biologically derived sensitized element linked to a physico-chemical transducer and is a combined knowledge of biology, chemistry, and nanotechnology to

improve crop productivity. These detect chemical species such as microbes, contaminants, pollutants, and food freshness and monitor environmental conditions. Taken together, proper and controlled use of nano biosensors can support sustainable agriculture and enhance crop productivity.

There are various types of nanobiosensors: 1) Mechanical, 2) Optical, 3) Nanowire, 4) Ion Channel Switch, 5) Electronic, 6) Viral, 7) PEEBLE, and 8) Nanoshell. The development of these is also one of the strengths of nanotechnology despite its early development stage and a few commercialized technologies. In terms of advantages, nano biosensors are ultra-sensitive. They can detect single virus particles or even ultra-low concentrations of a substance that could be potentially harmful, work at atomic scale with highest efficiency, and have increased surface to volume ratio. However, these are also disadvantageous since they are susceptible, error-proneand are still inin infancy(Rai et al., 2012).

The application of nano biosensors in crop protection helps in the identification of diseases and residues of agrochemicals. In precision farming, nano biosensors connected with a global positioning system (GPS) navigation system help in real-time monitoring of soil environments, crop growth, as well as precise application of fertilizers and pesticides. These are also used to closely assess environmental conditions, plant status, and growth.

Synthesis 4. *Nanotechnology for Seed Germination and Plant Growth Regulation*

Nanotechnology also involves the development of approaches to a range of inexpensive nanotech applications for enhanced seed germination, plant growth, development and acclimation to environments. The germination of seeds is a sensitive phase in the life cycle of a plant, which facilitates seedling development, survival, and population dynamics. However, seed germination is primarily affected by different parameters, including environmental factors, genetic traits, moisture availability, and soil fertility. Therefore, studies have shown that the application of nanomaterials has positive effects on germination and plant growth and development. For example, nano SiO_2, TiO_2, and Zeolite applications positively stimulate seed germination in crop plants. In addition to germination, nanomaterials, such as ZnO, TiO_2, MWCNTs, FeO, ZnFeCu-oxide, and hydroxy fullerenes, are reported to increase crop growth and development with quality enhancement in many crop species, including peanut, soybean, mungbean, wheat, onion, spinach, tomato, potato and mustard. Similarly, applying nanomaterials positively affects germination and plant growth and development. For example, applying multiwalled carbon nanotubes (MWCNTs) positively influences seed germination of different crop species, including tomato, corn, soybean, barley, wheat, maize, peanut, and garlic.

Moreover, the studies of nutrients on slow/controlled release or control loss of nano fertilizers carried out in water and soil have confirmed that the long-term availability of all the doped nutrients to the plant over the entire crop period of cultivation is crucial for promoting germination, growth, flowering, and fruiting. These results from nanomaterials have the potential to penetrate the seed coat and enhance the ability to absorb and utilize

water, which stimulates enzymatic systems and ultimately improves germination and seedling growth. These findings revealed perspectives of nanomaterials to improve crop yields and product quality. However, the mechanism of nanomaterial-induced water uptake inside the seed is still largely unknown; thus, it is still an area for research (Shang et al., 2019).

Conclusions

Based on the obtained data, the following conclusions are drawn:

1. Nanofertilizers, nanopesticides, nanosensors, and nanotechnology for seed germination and plant growth regulation significantly contribute to crop productivity. These nanotechnology applications facilitate nutrient uptake, increase the activity of insecticides while decreasing toxicity towards humans, help monitor plant health at the molecular level, and promote the growth, photosynthesis, and yield of many crop species.

2. Nanotechnology applications involve nanoparticles encapsulating fertilizer components such as loading N, P, and K into chitosan N.P.s that increase the acquisition of N, P, and K by 17.04%, 16.31%, and 67.50%, respectively. Spinosad- and permethrin-loaded chitosan nanoparticles were utilized as nano pesticides to fruit fly *Drosophila melanogaster*, which displayed reinforced bioavailability even at lower doses. One example is the utilization of nanosensors for plant disease diagnosis that is significant for monitoring plant health and taking immediate defensive actions such as having a lower limit of detection in recognizing three essential plant pathogens, *Botrytis cinerea*, *Pseudomonas syringae*, and *Fusarium oxysporum*. Another example is using nanomaterials for seed germination as it is related to antioxidant enzyme activities and the contents or utilization rates of water and oxygen, and another on Au nanoparticles significantly increasing the germination rate of pearl millet.

3. Applications of nanotechnology have been researched, and the results show that it has the potential to provide creative solutions to enhance sustainable agriculture and meet food demands. These solutions include monitoring plant growth status, addressing various agricultural issues, such as the overuse of pesticides and fertilizers, and significantly promoting plant growth and seed germination. Nanotechnology increases crop productivity, improves crop tolerance, and reduces environmental pollution, though its stability still needs to be considered.

Recommendations

The researchers at this moment propose the following recommendations:

1. Explore applications of nanotechnology in other agricultural areas, such as horticulture, animal production, food storage, and processing;

2. Assess the positive and negative effects of nanotechnology applications to further identify its implications in multiple applications across various areas of modern science, including physics, pharmacology, chemistry, food and agriculture, and agricultural engineering. This can either support or refute the claim that nanotechnology is an innovative solution to global challenges such as but not limited to food demands and environmental pollution.

Compliance with Ethical Standards

The study has mainly involved an intensive review of related published studies and literature due to the current circumstances and inaccessible tools and equipment for the actual experiment. Obtaining relevant data from secondary sources was supported by Xavier University's online database and other scholarly sources. The study has no actual experiments and the potential influence of the applications of nanotechnology to other areas of agriculture, such as animal production.

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NAVIGATING ETHICAL BOUNDARIES: EXPLORING THE BASIC COGNITIVE PROCESS OF DOUBLE STANDARD MORALITY AMONG PROFESSIONALS IN THE HOSPITALITY INDUSTRY

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ABSTRACT

This descriptive study aimed to investigate the perception of double standard morality among hospitality industry practitioners in Iloilo City. A researcher-made and validated questionnaire-checklist was utilized to collect data from 85 practitioners who were purposively selected from various sectors within the hospitality industry. The data analysis involved the use of descriptive statistical tools such as frequency count, percentage, mean, and standard deviation. Additionally, inferential statistics, including the Mann-Whitney U test and the Kruskall Wallis test, were employed to identify any differences in perceptions based on the participants' sex, age, and work position. The findings of the study revealed that, as a whole, the practitioners agreed on the existence of double standard morality. Furthermore, when the participants were categorized into specific groups such as young, female, managerial, and supervisory positions, they demonstrated a higher level of agreement on the presence of double standard morality. However, older, male, and line and staff respondents moderately agreed on the same. Additionally, the study revealed that individuals occupying higher work positions were more likely to agree on the presence of double standard morality. Interestingly, no significant differences were found in the perception of double standard morality among hospitality industry practitioners when categorized according to age, sex, and work position. These findings provide valuable insights into the understanding of double standard morality among practitioners in the hospitality industry. The results suggest the need for further exploration and intervention to effectively address this issue. By acknowledging the existence of double standard morality, industry stakeholders can work towards creating a more ethical and inclusive environment within the hospitality sector.

Keywords: *Double standard morality, Hospitality industry practitioners' perception, Researcher-made questionnaire-checklist, Descriptive statistical analysis, Differences in perceptions based on sex, age, and work position, Iloilo City*

INTRODUCTION

Morality is a complex system of behavior that encompasses standards of right and wrong conduct (Kohlberg, 1969). It encompasses moral standards, moral responsibility, and a moral identity. Synonyms for morality include ethics, principles, virtue, and goodness. In today's multicultural world, morality has become a subject of great importance as it influences our behavior, conscience, society, and ultimate destiny.

One aspect of morality that has persisted in Filipino culture since the Spanish colonial period is the presence of a double standard. This double standard is an outward display of injustice and discrimination. A notable example is the differential treatment of women and men engaged in extramarital activities. While societies tend to condemn women for such actions, they often turn a blind eye and remain silent when men are involved. This double standard morality can only be eliminated when we recognize the inherent value of every individual and learn to respect each other's worth (Noddings, 1984).

The existence of a double standard morality has sparked curiosity and interest in society, particularly among Bachelor of Science students in Hospitality Management. In this study, we aim to investigate the perception of hospitality industry practitioners regarding this matter. Understanding the differences in moral development between men and women is crucial in analyzing the impact of gender perspectives on morality (Gilligan, 1982). We seek to understand their understanding, knowledge, perception, and expertise in relation to the double standard morality prevalent in Filipino culture.

The impact of a person’s behaviour causes others to respond favourably or unfavourably. A person’s concept of how he empresses others can be a strong force on modifying his behaviour either to his advantage or disadvantage. This investigation is premised on the concept of Allport (1961) that achieving Double Standard Morality depends on the perceptions of the people that surrounds us upon developing satisfactory behavior patterns in many different aspects of living.

By delving into the capacity of hospitality industry practitioners to comprehend and navigate this issue, we can explore how individuals acquire and develop moral behavior through observational learning and self-regulation (Bandura, 1991). Through this study, we hope to shed light on the underlying factors that contribute to the perpetuation of double standards. This research will provide valuable insights into the perceptions and attitudes of practitioners in the hospitality industry, which can contribute to the development of strategies and interventions aimed at addressing this moral dilemma.

In conclusion, this study aims to explore the perception of hospitality industry practitioners regarding the double standard morality prevalent in Filipino culture. By examining their understanding, knowledge, perception, and expertise, we hope to contribute to the ongoing discourse on morality and work towards eliminating the double standards that persist in our society.

Research Questions

Generally, this study aims to determine the perceptions on double standard morality of the hospitality industry practitioners in Iloilo city during the year 2017-2018.

Specifically, this study sought answers to the following questions:

1. What is the perception of hospitality industry practitioner on double standard morality as an entire group and when classified as to sex, age, and work position?

2. Is there significant differences in the perception of hospitality industry practitioners when classified as to sex, age, and work position?

METHODOLOGY

The study employed a descriptive survey method to investigate the perceptions of double standard morality among hospitality hotel practitioners in Iloilo City. Descriptive research is suitable for analyzing existing conditions, opinions, beliefs, and developing trends (Best, 1992). The aim of descriptive research is to collect data that answers questions about the current status of the subject being studied (Gay, 1992). In this study, a one-shot survey design was used, which observes a single group of individuals or units of analysis over a limited time period (Jupp, 2006).

The sample for the study consisted of 85 purposively selected practitioners from various hospitality industries in Iloilo City. The selection of participants was based on their relevance to the research objectives. The respondents were classified based on sex, age, and work position. Age was classified as young (20 and below) and old (above 20), while sex was classified as male and female. Work positions were classified as managerial, supervisory, and line and staff. Simple random sampling techniques were used to select the participants.

Data was collected using a structured questionnaire checklist. The questionnaire was designed to be concise, clear, simple, and easily understandable. It consisted of two parts. Part One collected information about the respondents' personal data, including age, sex, and work positions. Part Two focused on gathering information about the

respondents' perceptions of double standard morality among hospitality industry practitioners in Iloilo City during the years 2017-2018.

The validity and reliability of the questionnaire were ensured through validation and reliability testing. The instrument achieved a reliability coefficient (r) of .957, indicating high reliability (Calmorin, 1987). Data analysis was conducted using the Statistical Package for the Social Sciences (SPSS).

Permission to conduct the study was obtained from the Office of the Director of the School of Management and approved by the Campus Administrator. After obtaining approval, the researchers sent a letter requesting permission to conduct the study to the hotel managers, who agreed to participate. The questionnaire was then distributed to the respondents by the researchers, who provided assistance if needed. The respondents were given sufficient time to complete the questionnaire, and the responses were tabulated for analysis and interpretation.

The collected data underwent statistical treatment using appropriate tools. Computation and analysis were performed using the SPSS software. Mean and standard deviation were used to determine the perception of hospitality industry practitioners regarding double standard morality. The statistical tools employed included frequency count, percentage, mean, and standard deviation. To assess differences in perception based on sex and age, the Mann-Whitney U Test was used. The Kruskall Wallis Test was used to analyze differences in perception based on work position.

RESULTS AND DISCUSSION

This section presents the findings of the study, which aimed to determine the perceptions of double standard morality among hospitality industry practitioners in Iloilo City. The mean was used as the basis for interpreting the results. By analyzing the data collected through the questionnaire, the study sought to gain insights into the prevailing perceptions regarding double standard morality within the hospitality industry in the city.

Perception of Hospitality industry practitioner on Double Standard Morality classified as Age, sex and work position

According to the table, the overall perception of the hospitality industry practitioners regarding double standard morality is "agree" (M=26, Sd=0.91). However, when we analyze the data based on specific categories, we find that the young practitioners (M=3.31, Sd=1.21), female practitioners (M=2.55, Sd=0.77), managerial practitioners (M=3.43, Sd=0.85), and supervisory position practitioners (M=3.41, Sd=1) all "agree" on double standard morality.

On the other hand, when we categorize the respondents as old practitioners (M=2.39, Sd=0.86), male practitioners (M=2.30, Sd=1.02), and line and staff practitioners (M=2.20, Sd=0.80), they "moderately agree" on double standard morality.

Table 1 reflects the results.

This simply means that young female generation is more aggressive and liberated compared to the old and male generation. As to work position those person occupying higher position agreed on double standard morality maybe because they can afford to spend and support if they have other woman. It Emphasize the importance of considering individual characteristics and contexts when examining perceptions of double standard morality within the hospitality industry. Further research can delve deeper into the underlying factors contributing to these variations, providing a more comprehensive understanding of the dynamics at play.

Table 1

Perception of Hospitality industry practitioner on Double standard Morality classified as Age, sex and work position.

Category	N	Mean	Sd	Description
Entire Group	85	3.42	.91	Agree
1. Age				
Young	11	3.31	1.21	Agree
Old (above 25)	74	2.39	.86	Moderately Agree
2. Sex				
Male	43	2.30	1.02	Moderately Agree
Female	42	2.55	.77	Agree
3. Work Position				
Managerial	38	3.43	.85	Agree
Supervisory	37	3.41	1	Agree
Line and Staff	10	2.20	.80	Moderately Agree

Note: To determine the Perception of Hospitality industry practitioner on Double Standard Morality, the researchers used this scale and its descriptions: 1.00 – 1.50 – Disagree;1.51 – 2.50 – Moderately Agree; 2.51 – 3.50– Agree;3.51 – 4.00 – Strongly Agree

Differences in the perception of Hospitality Industry Practitioner on Double Standard Morality classified as Age and Sex

The initial findings revealed the respondents perception on double standard morality in hospitality industry in the year 2017-2018.

The data showed that there is no significant difference in the perceptions of the respondents in hospitality industry classified as age and sex. The probability value of 0.49 was greater than the set of 0.0.05 alpha level of significance.

Table 2 reflects the results.

The findings of the study provide compelling evidence that there exists a striking harmony of opinion among respondents, regardless of their gender and age, when it comes to the complex issue of double standard morality. These results align with the insightful perspective presented by Josephine Butler (1886), who astutely argued that the perpetuation of a double standard of morality can be attributed, to a great extent, to the lack of a shared moral sentiment between men and women. This disparity in moral outlooks is particularly prevalent within the more refined echelons of society.

The study's outcomes not only reaffirm Butler's observations but also shed light on the prevailing attitudes of hospitality industry practitioners towards double standard morality. Remarkably, regardless of their age or gender, individuals working within the hospitality industry demonstrate a collective acceptance of this moral duality. This suggests that, within the context of their professional environment, these practitioners perceive double standard morality as an acceptable norm.

These findings prompt reflection on the broader societal implications surrounding the acceptance of double standard morality. They raise questions about the underlying factors that contribute to the perpetuation of this moral dichotomy, such as cultural norms, social expectations, and power dynamics. Further exploration and analysis are warranted to delve deeper into the reasons behind this acceptance and to understand its potential impact on individuals and society as a whole.

By recognizing and examining the prevailing attitudes towards double standard morality among diverse groups, including both young and old individuals of various genders, we can foster meaningful discussions and work towards promoting a more equitable and inclusive moral framework.

Table 2

Differences in the perception of Hospitality Industry Practitioner on Double Standard Morality classified as Age and Sex.

Category	Mean Rank	Mann Whitney U	Z -Value	P -Value	Statistical Decision
Young	47.82	354.00	- 0.69	0.49	Not Significant
Old	42.28				
Male	38.73	719.50	-1.61	0.11	Not Significant
Female	47.37				

p-value> 0.05 alpha

Differences in the perception of Hospitality Industry Practitioner on Double Standard Morality classified as Work Position.

Differences in the perception of Hospitality Industry Practitioner on Double Standard Morality classified as Work Position. The mean was used as the basis of interpretation.

When the respondents were classified as to Work Position (df =2, PV= 0.60) the findings revealed that no significant differences existed in the perception of hospitality industry practitioner on double standard morality.

Table 2 reflects the results.

The finding that no significant differences exist in the perception of double standard morality among hospitality industry practitioners based on work position suggests that individuals in different positions within the industry hold similar views on this particular issue. This could be attributed to several factors:

Common Organizational Culture: The hospitality industry often has a shared organizational culture that promotes certain values and norms. This shared culture may lead to similar perceptions and attitudes towards moral standards, including double standards. Professional Ethics: Hospitality industry practitioners are expected to adhere to professional ethics and standards, which may mitigate the influence of work position on perceptions of double standard morality. These professional ethics may guide individuals in the industry to uphold consistent moral standards regardless of their position. Shared Experiences: Regardless of work position, individuals in the hospitality industry may have similar experiences and interactions with guests, colleagues, and

management. These shared experiences may contribute to a shared understanding and perception of moral standards, including double standards. And lastly, Training and Education: The hospitality industry often provides training and education programs that emphasize ethical behavior and professionalism. Such programs may help shape the perceptions of practitioners across different work positions, leading to similar views on double standard morality.

Table 3

Differences in the perception of Hospitality Industry Practitioner on Double Standard Morality classified as Work Position

Category	Mean Rank	df	P-Value	Statistical Decision
Managerial Supervisory Line and staff	42.91 44.97 36.05	2	0.60	Not Significant

p-value> 0.05 alpha

Conclusions

Based on the findings presented, several conclusions can be drawn regarding the perception of hospitality industry practitioners on double standard morality:

Regardless of age and sex, the practitioners generally view double standard morality as acceptable. This suggests that there is a societal acceptance of different moral standards for different individuals within the industry. This finding aligns with previous research on moral relativism and cultural norms within the hospitality industry. According to Smith and Duffy (2014), the hospitality industry is characterized by a diverse workforce with varying cultural backgrounds, which can contribute to different moral perspectives and acceptance of double standards.

The results indicate that the younger female generation is more likely to agree with double standard morality compared to the older and male generation. This implies that the younger generation may be more assertive and liberated in their attitudes towards relationships and moral standards. This finding is supported by studies on generational differences and changing societal norms. For example, Johnson and Johnson (2016)

found that younger individuals are more likely to challenge traditional gender roles and embrace progressive attitudes towards relationships and sexuality.

Furthermore, it is observed that practitioners in higher positions, such as managerial and supervisory roles, are more likely to agree with double standard morality. This could be attributed to their financial stability and ability to support multiple partners if they choose to do so. This finding is consistent with research on power dynamics and moral decision-making. According to Jones and Ryan (2017), individuals in positions of power may be more inclined to engage in morally questionable behavior due to their increased resources and perceived immunity from social consequences.

Overall, these conclusions highlight the existence of varying perspectives on double standard morality within the hospitality industry, influenced by factors such as age, gender, and professional position. It is important for organizations within the industry to be aware of these differences and promote ethical behavior and fairness among employees. Further research could delve deeper into the underlying reasons for these variations and explore potential implications for organizational culture and employee well-being.

Recommendations

Based on the findings of the present study, several recommendations can be made to address the perceptions of double standard morality within the hospitality industry:

Hotel owners should strive to be role models for their employees and create a culture of awareness and sensitivity. They can lead by example and promote ethical behavior and fairness within their establishments.

Guidance counselors should conduct sensitivity trainings and development-related symposiums for students, particularly those pursuing hospitality industry-related courses. These initiatives can increase awareness and knowledge about double standard morality, helping students make informed decisions and navigate ethical dilemmas in their future careers.

Teachers, especially psychology teachers who discuss topics related to morality, should incorporate more interesting discussions about double standard morality in their curriculum. They can also share the findings of this study to provide students with different perspectives and insights from hospitality industry practitioners.

Students taking up hospitality industry-related courses should be advised to become responsible individuals who are aware of their rights and exercise them with

limitations. They should be encouraged to develop a strong sense of personal integrity and ethical decision-making.

Hospitality industry practitioners should strive to be knowledgeable about the perceptions of their subordinates or colleagues. Understanding and sensitivity towards diverse perspectives can foster a more inclusive and respectful work environment.

The community should be informed and respectful towards the people in the hospitality industry, avoiding judgment based on double standard morality. Promoting empathy and understanding can contribute to a more harmonious and supportive community.

Future researchers can build upon the findings of this study and conduct further research to explore new and unique ways to improve understanding and address the perceptions of double standard morality within the hospitality industry. This could lead to the development of innovative strategies and interventions to promote ethical behavior and fairness.

By implementing these recommendations, stakeholders in the hospitality industry can work towards creating a more inclusive, ethical, and respectful environment for all practitioners.

Compliance with Ethical Standards

In conducting this study, we, the authors, declare our compliance with ethical guidelines and principles to ensure the well-being and rights of the research participants. We obtained informed consent from all participants, including their parents or guardians, prior to their involvement in the study. The informed consent process provided them with a clear understanding of the study's purpose, procedures, and potential risks and benefits. Participants were informed of their freedom to withdraw from the study at any time without any negative consequences.

We ensured the anonymity of the respondents by maintaining confidentiality and protecting their personal information. All data collected were treated with utmost confidentiality, and the identities of the participants were kept strictly confidential. Any identifying information was removed or anonymized during the data analysis and reporting process.

The well-being of the participants was safeguarded throughout the study. We took measures to minimize any potential harm or discomfort to the participants. The research procedures were designed to be non-invasive and did not pose any physical or psychological risks to the participants. We prioritized the safety and welfare of the participants at all times.

We declare that there is no conflict of interest that could potentially influence the conduct or interpretation of the study. The research was conducted purely for academic

and research purposes, without any external influences or biases. We maintained objectivity and impartiality in the interpretation of the findings, ensuring that no bias was present in the analysis and reporting of the results.

Furthermore, we strictly adhered to ethical standards regarding plagiarism. All sources and references were properly cited, and any direct quotations or paraphrased information were appropriately attributed to the original authors. The study was conducted with integrity and in accordance with the principles of academic honesty and intellectual property rights.

Lastly, we affirm that the results of this study will be used solely for research purposes. The findings will contribute to the existing body of knowledge and serve as a basis for further research and academic discussions. The results will not be used for any other purposes that may compromise the privacy or rights of the participants.

In conclusion, we, the authors, are committed to upholding ethical standards and ensuring the well-being and rights of the research participants throughout the study. We are dedicated to conducting research with integrity, transparency, and respect for the individuals who participated in this study.

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ONLINE GAMING: HEALTH RELATED EFFECTS AMONG STUDENTS

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ABSTRACT

This study delves into the health-related implications of online gaming among students at Holy Name University. Through surveys and focus group discussions, the research examines demographic characteristics, gaming patterns, perceived effects on physical, mental, and emotional well-being, as well as the correlation between gaming duration and health perceptions. The data revealed that a significant portion of respondents are male, predominantly around the age of 20, with diverse gaming habits. Most students reported spending 2-3 hours per day playing online games, primarily on cellphones using mobile data. Action and adventure games are the preferred genres. While online gaming was found to have negative effects such as poor nutrition, lack of concentration, and mood swings, it was also perceived as a stress-relieving activity. The study recommends tailored health education initiatives, counseling programs, and monitoring of internet usage to mitigate potential negative impacts. Furthermore, addressing communication technology issues is advised to foster responsible internet use among students. Despite the identified drawbacks, online gaming was acknowledged as a source of stress relief and motivation for students. These findings highlight the importance of promoting balanced internet usage and implementing strategies to support students in managing their online gaming habits effectively.

Keywords: *Demographic Profiles, Health-Related Effects, Online Gaming, Technological Addiction*

INTRODUCTION

There are plenty of changes in our daily life with the rise of internet, in particular the rise also allows online games to bloom. In today's society, people and internet are indivisible, students are also dependent in the internet for its educational and entertainment purposes (Parel, 2017). Online gaming is quite popular nowadays as a sort of entertainment for the society that targets people of all ages: young and adult (Zamani, Chashmi, & Hedayati, 2009). It is one of many people's popular recreational activities, and young people who play online games said that they're playing just for fun.

Playing is an innate part of the human experience and it is also a habitual leisure-time activity for many gamers (Hu, Stavropoulos, Anderson, Scerri & Collard, 2018). It is very captivating with all the new and improved technology created through the years. In online gaming, there are lots of categories and there are different trivial level of the game and adventures that makes the gamers of all ages excited and as the game engross to different higher level, the challenging obstacles of the games makes the gamers crave more and if they lose they keep on playing until they win to recover from the loss. In the current digital era, the play has expanded because of the acceleration and ballooning of videogames with an exceeding 135 billion dollars estimated global market value (Wijman, 2018).

For most people, online gaming is one of the best time they have ever acquired, especially for teenagers, young people and students. Students who play online games are just having fun. They're not just playing because of some sort of seriousness, but also because they just want to feel relief. Students tend to feel stressed during school hours due to loads of school work and relieve their stress through playing it. For some, it is said that playing online games has a number of reasons to be played, for it can be a stress reliever, challenge and competition, relaxation, enjoyment, social interaction, and even mentally escaping from the real world (Griffiths, 2015).

There are relative number of studies, all of which suggest that excessive online gaming also have a wide range of negative psychosocial consequences for a minority of people affected. In some cases, these can include education, hobbies, socializing, time with family, and sleep; increased stress; an absence of real-life relationships; lower psychosocial well-being and loneliness; decreased academic achievement; increased inattention; aggressive/oppositional behavior and hostility; maladaptive coping; decreases in verbal memory performance; maladaptive cognitions; and suicidal ideation. According to Griffiths et al. (2012), many health and medical consequences results from excessive gaming (both online and offline) in addition to the reported negative psychosocial consequences. These included epileptic seizures, auditory hallucinations, obesity, wrist pain, neck pain, blisters, calluses, sore tendons, and numbness of fingers, sleep abnormalities, and repetitive strain injuries (Griffiths, 2015).

An experience that relates to this study is about a student who plays online games to relieve stress but ends up being stress because if he doesn't play often, his ranking to the game will suddenly drop. In addition to this, he also shares that he experiences sleepless nights, feels pain in the eye, and sometimes he skips his meal. Another

experience is that some students shares that they feel neck pain and dizziness after playing. Somehow, the researcher also observed students playing online games while I have my class discussion, the result would be a lesser concentration in class discussion for they are craving to play. An article also mentions about dangerous online games that targets children and adolescents that presents various 'dares' and if they fail, they are goaded to take their own life. Some anonymous person will instruct the gamers to engage in odd activities such as waking up at night or overcoming a fear. The gamers are then told to video and film themselves doing these activities, and if they succeed, the anonymous person will encourage them to partake in more dangerous dares that involves self-harm and eventually leading to suicide. These experiences demonstrate how online games brought changes to students in regards to physical, mental and emotional health.

Other studies (Griffiths, 2015) focus on the general consequences of online gaming addiction. Other studies (Zamani, Chashmi, & Hedayati, 2009) specified their scope on computer games rather than online games. Given the limitations of the studies mentioned, the purpose of this research is to determine if there is a significant relationship between the amount of time spent on playing online games and the health-related effects on the respondents.

Research Questions

The purpose of the study was to determine the health-related effects in relation to online gaming among the students at Holy Name University. Specifically, this study sought to answer the following sub-questions:

1. What is demographic profile of the respondents in terms of:
    1.1 Age;
    1.2 Gender; and
    1.3 Course?
2. What is the method utilized by the respondents in playing online games in terms of:
    2.1 Gadget used;
    2.2 Type of connection used; and
    2.3 Type of online games?
3. What is the respondents' online gaming frequency in terms of:
    3.1 Number of hours per day; and
    3.2 Time of playing?
4. What are the health-related effects on Online Game in terms of:
    5.1 Physical;
    5.2 Mental; and
    5.3 Emotional?
5. Is there a significant relationship between the amount of time spent on playing online games and the perception of the gamers of the health-related effects of online gaming?
6. What recommendations can be formulated based on the results of the study?

METHODOLOGY

Research Design

The researcher employed a quantitative-qualitative research approach. A descriptive design was employed, where the respondents were interviewed using a self-made questionnaire as a research tool to gather data for the study. Additionally, a focus group discussion was conducted to elicit responses to specific questions, facilitated by the researcher, serving as the basis for the qualitative aspect of the research.

Research Environment

This study was conducted at Holy Name University, located in Tagbilaran City, Bohol, during the school year 2019-2020. College students participated in providing information relevant to the study. Holy Name University is a Philippine Accrediting Association of Schools, Colleges, and Universities (PAASCU) accredited institution renowned for providing high-quality education and training. The aim of this research output was to contribute the study's findings for the benefit of the school and its students.

Research Respondents

The chosen respondents are college students in all levels of Holy Name University. There were 117 college students who were chosen through a snowball sampling in the quantitative method.

Protecting the autonomy and dignity of the respondents, the researcher only distributed the questionnaire to the respondents after thoroughly explaining to them the aim, motivation, purpose, research questions, and other necessary information that enable the respondents to make the decision whether they prefer to join or not.

After the informed consent was given to the respondents, they were asked to answer the questionnaire.

No identifying markers on the answered questionnaire were upheld during the entire duration of the research. In cases wherein the questionnaire induced some negative emotions or memories, the researchers assisted them in securing the help the respondents needed.

Criteria in selecting the respondents in the quantitative method:

The criteria for selecting respondents in the quantitative method encompassed several key factors. Firstly, participants were required to have engaged in online gaming activities on a regular basis, specifically playing games on 5 to 7 days per week. Secondly, individuals who played multiple games were sought after, reflecting a diverse gaming experience. Lastly, respondents were expected to have dedicated a significant amount of time to online gaming, spending a minimum of 2 to 3 hours per day immersed in gaming

activities. These criteria were carefully chosen to target a sample group that represented active and committed online gamers, ensuring a comprehensive understanding of their gaming behaviors and habits within the context of the study.

The respondents of the qualitative method were chosen based on the result of the quantitative method. There were 8 respondents that were chosen based on the amount of time they play online games.

Criteria in selecting the respondents in the qualitative method:

Criteria for selecting respondents in the qualitative method emphasized individuals who spent 8 hours or more per day engaging in online gaming activities. This criterion was strategically chosen to target participants who exhibited a high level of involvement and immersion in online gaming, potentially providing deeper insights into their experiences, behaviors, and perceptions related to prolonged gaming sessions. By focusing on this specific subset of respondents, the qualitative aspect of the research aimed to explore in-depth the nuances and implications of extensive online gaming habits on various aspects of the participants' lives, including their physical and mental well-being, social interactions, and overall lifestyle. Through the qualitative interviews and discussions with these selected respondents, the research sought to uncover detailed narratives, perspectives, and experiences that could enrich the understanding of the complexities surrounding prolonged online gaming and its impact on individuals within the college student population at Holy Name University.

Research Instruments

The instrument used in the study is a self-made questionnaire. It is made up of questions which can be answered by checking the space of the chosen answer. The questionnaire is about online gaming assessment, and it contains profiling questions, the amount of time spent on playing online games in a day, the number of online games played, the time of the day the gamers normally play, and the effects of playing online games as a health risk to physical, mental and emotional health.

The questionnaire on Online Gaming: Health Related Effects Among Students, a quantitative and qualitative study had two (2) parts. The demographic profile of the respondents was the first part which included the respondent’s age, gender, course as well as the method in playing online games and the frequency of playing online games by the respondents which can be answered in a yes or no.

The second part covered the respondents’ health related effects of online gaming and is divided three subparts. The first subpart was the physical health related effects. This part covered the respondent’s physical symptoms in playing the online games.

The second subpart was the mental health related effects experience by the respondents. Lastly, the third subpart inquired about the emotional health related effects of the respondents in playing online games.

The Likert scale was used to determine the respondents' health related effects frequency with the statement: 1.00 - 1.80 = Never; 1.81 - 2.60 = Rarely, 2.61 - 3.40 = Sometimes; 3.41 - 4.20 = Often times; 4.21 - 5.00 = Always.

The questionnaire for Online Games; Health Related Effects Among Students was validated through pilot-testing on 30 respondents. The respondents subjected for pilot-testing were not research respondents nor studying in the research locale. The result was then validated by a statistician as to the questionnaire's reliability using Chi-square test of independence with a level of significance of 0.05

Research Procedure

Gathering of Data. Modifications were made when necessary. The researcher has submitted the study protocol to HNU-Ethics Review Board to secure the ethical clearance for the study. Only after receiving the ethical clearance, gathering of data begun. After confirming the validity and reliability of the questionnaire, it was pilot tested to respondents. The respondents were asked to fill-up the questionnaire during their free time and in the location that they feel comfortable and safe. To be able to gather data and information, a letter was made by the researcher, and was sent to the Dean of the different colleges of Holy Name University asking permission to conduct the study to the college students. After the official permission was granted by the dean, the questionnaires were given to the respondents. As the respondents answer the questionnaires, it was collected and consolidated to be submitted to the statistical adviser of the study for the statistical treatment.

A focal group discussion was also conducted to elicit responses from the excessive online gamers. There were 8 respondents who undergone such discussions which was facilitated by the researchers on a specific time. This would be the basis of the qualitative type of research on the study.

Treatment of Data. The research questionnaires were collected, and the data was tallied, collated, and subjected to treatment and interpretation. Tabulation was made to show the relationships which was seen among the data. After doing the process, it was interpreted by the researchers:

1. Chi- Square Test of Independence (used to determine significance of relationship between two nominal variables)

$$\chi^2 = \sum \frac{(f_o - f_e)^2}{f_e}$$

$$where: \; f_o = observed \; frequency$$
$$f_e = \exp ected \; frequency$$

2. Mean

$$\overline{X} = \frac{\sum_{i=1}^{n} X_i}{n}$$

Where: x=scores

N = sample size

3. Percentage

$$Percentage(\%) = \frac{f}{N} \times 100$$

where: f = frequency

N = sample size

RESULTS

Table 1
Age Profile of the Respondents

Age Bracket	Frequency	Percent
18-21	90	76.9
22-26	26	22.2
27 and above	1	0.9

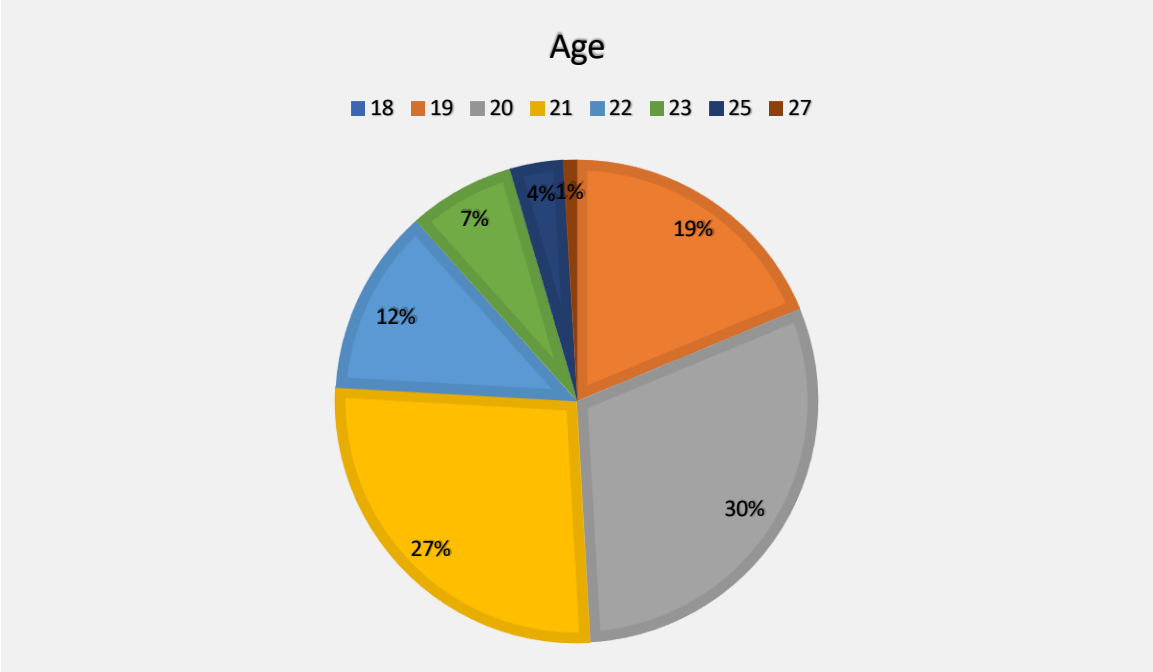


Figure 1
Age Profile of the Respondents

Table 1 shows the respondent's age bracket on the number of online gamers based on the given age. Majority of the respondents who plays online games are from aged 20 with a total of 34 respondents out of the 117 online gamers which has a total percentage of 29.1% while the least number of respondents comes from the age of 27 or only at 0.9%.

The study of Gough (2019) relates to the table of the age profile of the respondents wherein the majority of the online gamers comes from the 18 to 35 age demographic with a percentage of 40%, followed by gamers under 18 years old with a percentage of 21%, the same with gamers with the aged of 50 and above with a percentage of 21%, while the least number comes from aged 36 to 49 years old with a percentage of 18%.

Table 2
Gender Profile of the Respondents

Gender	Frequency	Percentage
Male	83	70.9
Female	34	29.1
Total	117	100

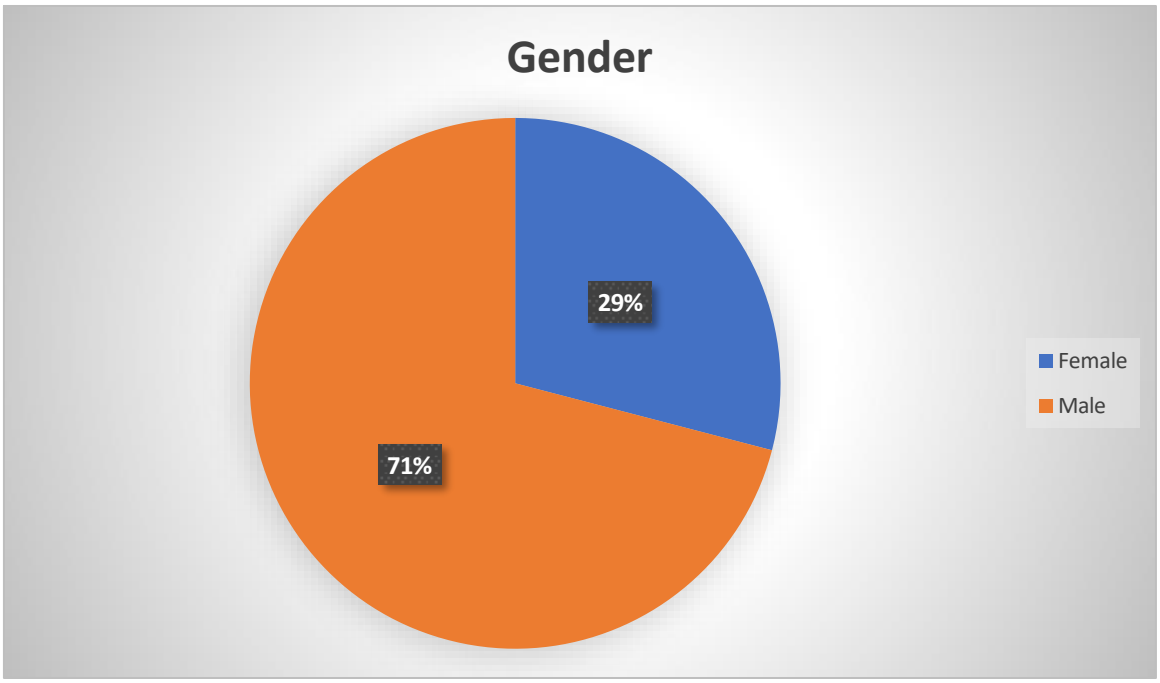


Figure 2
Gender Profile of the Respondents

Table 2 presented the gender profile of the respondents. The male dominated the total number of gamers with a total of 83 respondents (70.9%) compared to the female respondents which comprises only a total of 34 out of the 117 respondents with a percentage of 29.1%. According to the Entertainment Software Association (ESA) with their updated survey this 2019, the male dominated the population of online gamers with a total percentage of 54%, compared to females which is closer to become equal with the males having a percentage of 46%.

Among the gaming population, teenage and adult males display much more addictive use of internet gaming in terms of screen hours, addiction, and negative health effects, which also caused death in isolated incidents. Adult males appeared to spend more time playing, playing 4.68 hours a day and 27.76 hours a week on average (Kirby et al., 2014). Overall, males devoted more time and energy to betting on computers than females, indicating that computers are male toys (Kuss, 2013; Vollmer et al., 2014). It is important to note that males design the majority of games on the market for males (Spekman et al., 2013). In reality, gaming firms target male customers and capitalize on this strategy to boost sales (Kuss, 2013; Vollmer et al., 2014). This may explain in part the increased use of gaming in males and the increased susceptibility of men to Internet Gaming Disorder (Chen, 2018).

Table 3
Course Profile of the Respondents

	Frequency	Percent
CHS:		
BSN (Bachelor of science in Nursing)	27	23.1
BSMT (Bachelor of Science in Medical Technology)	1	.9
CBA:		
BSA (Bachelor of Science in Accountancy)	13	11.1
BSBA-MA (Bachelor of Science in Business Administration – Major in Management Accounting)	8	6.8
BSBA-FM (Bachelor of Science in Business Administration – Major in Financial Management)	12	10.3
BSHRM (Bachelor of Science in Hotel and Restaurant Management)	15	12.8
BSTM (Bachelor of Science in Tourism Management)	4	3.4
COECS:		
BSECE (Bachelor of Science in Electronics and Communications Engineering)	4	3.4
BSCE (Bachelor of Science in Civil Engineering)	18	15.4
BSCS (Bachelor of Science in Computer Studies)	1	.9
BSIT (Bachelor of Science in Information Technology)	5	4.3
CAS:		
BSPSYCH (Bachelor of Science in Psychology)	1	.9
BSCRIM (Bachelor of Science in Criminology)	8	6.8
Total	117	100.0

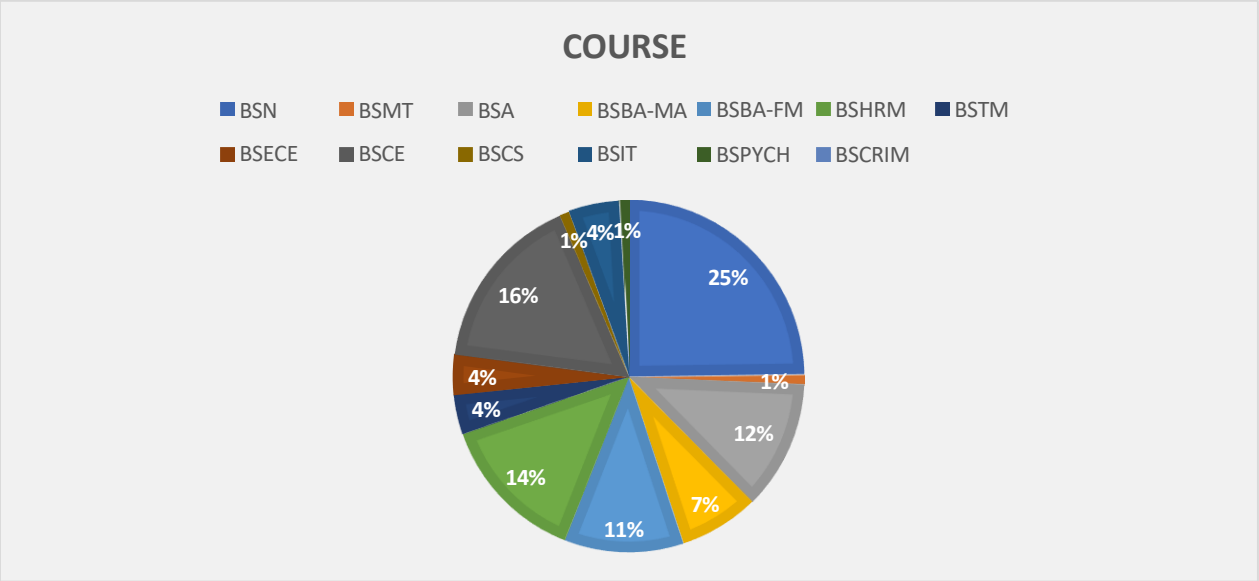


Figure 3

Course Profile of the Respondents

Table 3 shows the course profile of the respondents. The highest number of respondents are from the Bachelor of Science in Nursing with a total number of 27 respondents with a percentage of 23.1%. While the least number of online games are from the Bachelor of Science in Psychology, Bachelor of Science in Computer Studies and from the Bachelor of Science in Medical Technology which has only 1 respondent each with a percentage of 0.9%.

Table 4
Gadget used for Online Gaming

	N	Percent	Percent of Cases
Cellphone	108	76.1	92.3
Laptop	16	11.3	13.7
PC	14	9.9	12.0
Tab/iPad	4	2.8	3.4
Total	142	100.0	121.4

Table 4 illustrates the gadgets used for online gaming. Majority of the respondents used cellphones for online gaming with a frequency of 108 out of the total 117 respondents with a percentage of 76.1 %. While the least utilized gadget for online gaming is tab/iPad which has a frequency of 4 with a percentage of 2.8 %. According to a survey, even though there are variety of gadgets used in playing online games, mobile phones remain the most popular device used in playing online games. This is in line with the findings of 2018, where mobile phones were also the most commonly used gaming device (Harris, 2019). At the same time, the share of mobile phone users who say a desktop, laptop or tablet, computer is their primary device for going online has fallen from 53% in 2013 to 30% in 2019 (Anderson, 2019).

Table 5
Type of Connection Used in Online Gaming

	N	Percent	Percent of Cases
Home	68	29.2	58.6
Mobile Data	90	38.6	77.6
Internet Café	24	10.3	20.7
School's Free Wifi	51	21.9	44.0
Total	233	100.0	200.9

On table 5, it reflected the type of connection used in online gaming. Mobile data has the highest frequency on the type of connection used in online gaming with a total of 90 and with a percentage of 38.6 %. Further, internet cafes is the least type of connection with a total of 24 and with a percentage of 10.3 %. According to a survey, fully 58% of 18- to 29-year-olds say they mostly go online through a smartphone or mobile data, up from 41% in 2013. Still, this growth is evident across all age groups. Among non-broadband

users, 45% say they do not have broadband at home because their smartphone lets them do everything they need to do online, up from 27% in 2015. At the same time, the share of non-broadband users who say their smartphone is the most important reason for not having a high-speed internet connection where they live has nearly doubled over the same time period (from 12% to 23%). And while affordability remains a commonly cited barrier, the share of non-broadband adopters who say the cost of a monthly subscription is the most important reason for not having these services has fallen from 33% in 2015 to 21% today (Anderson, 2019).

Table 6
Type of Online Games Utilized by the Respondents

Online Games	Frequency	Percent	Percent of Cases
Action and Adventure Games	97	13.3	82.9
Casino Games	30	4.1	25.6
Educational Games	58	7.9	49.6
Puzzle Games	61	8.3	52.1
Board Games	40	5.5	34.2
Massively Multiplayer Online Games	82	11.2	70.1
Strategy Games	92	12.6	78.6
Sport Games	68	9.3	58.1
Shooting Games	68	9.3	58.1
Racing Games	71	9.7	60.7
Role Playing Games	57	7.8	48.7
MOB games	7	1.0	6.0
Simulation Games	1	0.1	0.9
Total	732	100.0	625.6

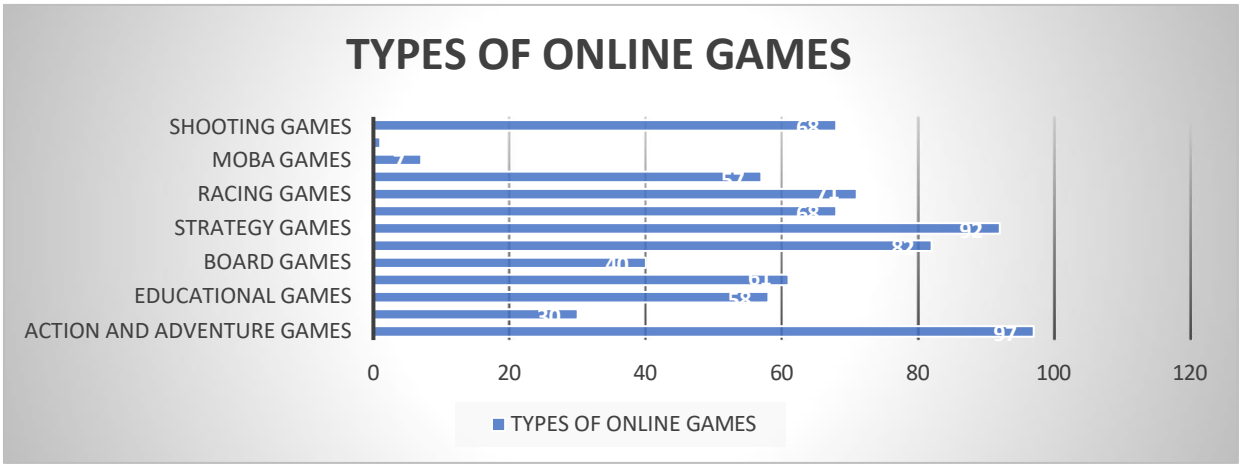


Figure 4. Type of Online Games Utilized by the Respondent

Table 6 presented the type of online games played by the respondents. The highest number of respondents played action and adventure games which has total

frequency of 97 and a total percentage of cases of 82.9 %. It is roughly followed by strategy games with a total number of 92 and a percentage of cases of 78. 6 %. The third most common online game used by the respondents is the massively multiplayer online games with a total number of 82 or with a percentage of cases of 70.1 %. While the least online game played by the respondents is the simulation games which comprises of only 1 and with a percentage of case of 0.9 %. According to a study, the most played game genre is Action Games with a percentage of 26.9%, followed by Shooting Games with a percentage of 20.9%, third is Role Playing Games with a percentage of 11.3%, fourth is Sport Games with a percentage of 11.1%, fifth is Adventure Games with a percentage of 7.9%, followed by Fighting Games with a percentage of 7.8% (Gough, 2019).

Table 7
Number of Hours Playing Online Games Per Day

	Frequency	Percent
2-3 HOURS	53	45.3
4-5 HOURS	39	33.3
6-7 HOURS	14	12.0
8 HOURS AND ABOVE	11	9.4
Total	117	100.0

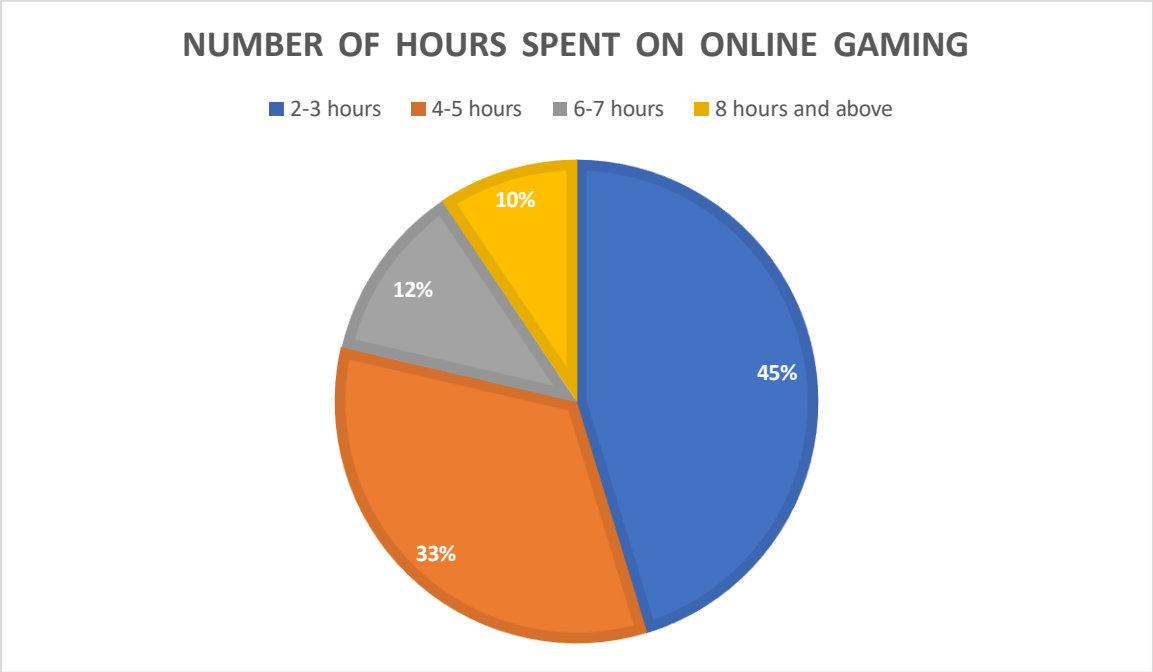


Figure 5. Number of Hours Playing Online Games Per Day

The number of hours spent playing online games per day is presented on this table. It shows that majority of the respondents spent 2 – 3 hour per day in playing with a total of 53 respondents out of the total 117 and with a percentage of 45.3 %. While the 8

hours and above bracket has the least number of frequency with a total of 11 and with a percentage of 9.4 %.

Table 8
Time of Playing Online Games

	N	Percent	Percent of Cases
MORNING	36	13.6	31.0
AFTERNOON	52	19.7	44.8
NIGHT	98	37.1	84.5
MIDNIGHT	44	16.7	37.9
DAWN	34	12.9	29.3
Total	264	100.0	227.6

Table 8 presented the time of playing online games among the respondents. Most of the online gamers plays during the night with a total of 98 and with a percentage of cases of 84.5 %. It further showed that during the dawn is the least time of the day that is spent in online gaming with only a total of 34 and with a percentage of cases of 29. 3 %.

According to an article, online gamers who play at night often get less sleep than they need because they delay their bedtimes to keep playing. In a survey of close to 1,000 regular gamers who were age 13 and older (mean 28.7 years), two-thirds said they frequently lost sleep because they were playing video games. Other data suggest that almost three out of four Americans play video games, and nine out of 10 do not sleep as much as recommended (Boyles, 2016). In table 8, most of the respondents answered that they often play online games during at night, which may alter their sleep.

Table 9
Physical Health Related Effects of Online Gaming

Physical Effects	Descriptive Rating Scale					
	Never	Rarely	Sometimes	Often	Always	Average
1. Fatigue	35 (29.9%)	36 (30.8%)	36 (30.8%)	7 (6.0%)	3 (2.6%)	Rarely
2. Poor Posture	23 (19.7%)	36 (30.8%)	42 (35.9%)	13 (11.1)	3 (2.6)	Sometimes
3. Poor Nutrition	37 (31.6%)	45 (38.5%)	28 (23.9%)	6 (5.1%)	1 (0.9%)	Rarely
4. Back Pain	21 (17.9%)	33 (28.2 %)	35 (29.9%)	22 (18.8%)	6 (5.1%)	Sometimes
5. Neck aches	17 (14.5%)	39 (33.3%)	34 (29.1 %)	19 (16.2%)	8 (6.8%)	Rarely
6. Shoulder Pain	19 (16.2%)	38 (32.5%)	37 (31.6%)	18 (15.4%)	5 (4.3%)	Rarely

7. Hand Cramps	30 (25.6%)	31 (26.5%)	36 (30.8%)	12 (10.3%)	8 (6.8%)	Sometimes
8. Eye Pain	11 (9.4%)	27 (23.1%)	36 (30.8%)	28 (23.9%)	15 (12.8%)	Sometimes
9. Tearing of Eyes	21 (17.9%)	24 (20.5%)	33 (28.2%)	25 (21.4%)	14 (12.0%)	Sometimes
10. Headache	17 (14.5%)	36 (30.8%)	34 (29.1%)	21 (17.9%)	9 (7.7%)	Rarely
11. Dizziness	32 (27.4%)	40 (34.2%)	32 (27.4%)	9 (7.7%)	4 (3.4%)	Rarely
12. Tardiness	21 (17.9%)	41 (35.0%)	34 (29.1%)	13 (11.1%)	8 (6.8%)	Rarely
General Average						Rarely

On this table, the highest frequency of the respondents experiences poor nutrition as the most common physical effects of online gaming with a frequency of 45 respondents or a total percentage of 38.5 % and with a qualitative description of Rarely. On the other hand, the least physical effects of online gaming is tearing of eyes which has a frequency of 33 and with a total percentage of 28.2% with a qualitative description of sometimes.

In a study measuring the effects of digital gaming on nutrition habits in university students, it was found that as the duration of playing digital games increases, negative eating habits increases, minds constantly occupied and primary needs such as nutrition lost importance. They also observed that main meals are skipped and snacking was preferred. In another study conducted on students, Smahel et al (2012) stated that as the duration of playing internet games increased, nutrition habits deteriorated and children became depressed. Similarly, it is reported that children with internet addiction encountered problems including nutrition disorders (Tetik et.al, 2018).

Table 10
Mental Health Related Effects of Online Gaming

Mental Effects	Descriptive Rating					
	Never	Rarely	Sometimes	Often	Always	Average
1. Poor Concentration	29 (24.8%)	41 (35.0%)	32 (27.4%)	13 (11.1%)	2 (1.7%)	Rarely
2. Confusion	44 (37.6%)	33 (28.2%)	26 (22.2%)	13 (11.1%)	1 (0.9%)	Never
3. Obsessive (Uncontrollable thoughts)	34 (29.1%)	39 (33.3%)	28 (23.9%)	14 (12.0%)	2 (1.7%)	Rarely
4. Compulsive (Repetitive behaviors)	43 (36.8%)	30 (25.6%)	29 (24.8%)	15 (12.8%)	0 (0%)	Never

5. Impulsive	50 (42.7%)	31 (26.5%)	28 (23.9%)	8 (6.8%)	0 (0%)	Never
6. Low Self-esteem	48 (41.0%)	31 (26.5%)	21 (17.9%)	10 (8.5%)	7 (6.0%)	Never
General Average						Never

Table 10 discusses on the mental effects of gaming. It illustrates that poor concentration has the highest frequency in terms of mental effects on the respondents with a frequency of 41 and with a percentage of 35.0% with a qualitative description of rarely. Moreover, impulsiveness is the least mental effects of online gamers with a frequency of 50 and with a corresponding percentage of 42.7% with a qualitative description of Never.

According to a study, college students spending too much time on online games every week tend to suffer from worsened learning ability, concentration problems, poor academic performance, and decreased interactions with other people (Lin et al., 2013). Playing online games for a long time will create a negative impact on academic performance. Lack of concentration will be an issue in spending more time in playing online games (Ali, 2018).

According to a study in which during gaming, gamers has decrease impulsiveness. A person playing a video game with a first-person shooter like Halo or Unreal Tournament has to make quick decisions. It turns out that rapid decision-making improves the visual abilities of the player but comes at a cost, according to new research: reducing the ability of the individual to suppress impulsive behavior. This decrease in what is called "proactive executive regulation" seems to be another way to increase aggressive behavior through violent video games. The ability of people to override aggressive impulses is largely dependent on good executive control capacity, as will be presented at an annual meeting in Honolulu at the American Psychological Association (APA). So social psychologists are looking at how this skill is impacted by a variety of factors, including media exposure, frustration, so alcohol. Two forms of mechanisms of cognitive control play a major role: constructive and reactive. Researchers have found that playing action video games is correlated with increased visuospatial attention capacity, but also decreased constructive cognitive function. According to Anderson, their studies are the first to connect violent video game play within the same study with both beneficial and harmful effect (Anderson, 2013).

Another study talks about the impulsive behaviors of the gamers, in which impulsiveness is related to the development of addictive gaming behavior. Their findings confirm that the more impulsive young people are more likely to develop addictive gaming behavior. Their results are consistent with recent studies suggesting that the addiction to video games is an impulse control disorder (Ding et al., 2014; Gentile et al., 2011). Results of the meta-analysis carried out by MacKillop et al. (2011) of the relationship between

impulsiveness and addiction provide strong evidence that impulsiveness is related to the development of addictive behavior in general (Lloret Irles & Morell Gomis, 2015).

Table 11
Emotional Health Related Effects on Online Gaming

Emotional Effects	Descriptive Rating					
	Never	Rarely	Sometimes	Often	Always	Average
1. Depressed	63 (53.8%)	30 (25.6%)	15 (12.8%)	4 (3.4%)	5 (4.3%)	Never
2. Anxious	43 (36.8%)	44 (37.6%)	20 (17.1%)	7 (6.0%)	3 (2.6%)	Rarely
3. Irritable	27 (23.1%)	37 (31.6%)	31 (26.5%)	15 (12.8%)	7 (6.0%)	Rarely
4. Happy	2 (1.7%)	9 (7.7%)	23 (19.7%)	29 (24.8%)	54 (46.2%)	Always
5. Sad	38 (32.5%)	36 (30.8%)	32 (27.4%)	4 (3.4%)	7 (6.0%)	Never
6. Angry	23 (19.7%)	33 (28.2%)	36 (30.8%)	16 (13.7%)	9 (7.7%)	Sometimes
7. Guilt	52 (44.4%)	33 (28.2%)	21 (17.9%)	9 (7.7%)	2 (1.7%)	Never
8. Shame	57 (48.7%)	29 (24.8%)	21 (17.9%)	7 (6.0%)	3 (2.6%)	Never
General Average						Never

Table 11 discusses on the emotional effects of gaming. It shows that being happy has the highest frequency in terms of emotional effects on the respondents with a frequency of 54 and with a percentage of 46.2%. Moreover, being depressed is the least emotional effects of online gamers with a frequency of 63 and with a corresponding percentage of 53.8%.

According to a study, Improvements in mood, stress reduction, and skills and flexibility from playing video games. The study showed benefits in terms of social well-being and associated feelings for young people. Researchers found that competitive video game play for younger people was associated with increased brain activity. More specifically, using a well-validated measure of mental health and well-being, it has found evidence that playing video games with other people has had a positive effect on well-being for adult players. In a randomized controlled trial with a clinically depressed adult population, it has been shown that the beneficial effects of video games include a decrease in anxiety, frustration, depression and exhaustion and an increase in vigor. Importantly, the associated changes in brain activity and variability in heart rate supported these improvements (Johnson, 2013).

According to a study, the highest probability for depressive, musculoskeletal, and psychosomatic symptoms was found among weekday gamers, especially those who played for high Escape motives and spent an excessive amount of time gaming. Furthermore, among individuals driven by positive motives, time spent gaming was of high importance in relation to ill health, whereas among the negative motives the time spent gaming was less important (Hellstrom et al., 2015).

Table 13
Relationship Between the Amount of Time Spent and Health Related Effects of Online Gaming

Variables Correlated	Chi – Square Value	P- value	Decision on Ho	Interpretation
No. of Hours Spent for Gaming and Physical Effects of Online Gaming	10.705	0.098	Accept Ho	Not Significant
No. of Hours Spent for Gaming and Mental Effects of Online Gaming	8.241	0.221	Accept Ho	Not Significant
No. of Hours Spent for Gaming and Emotional Effects of Online Gaming	4.251	0.607	Accept Ho	Not Significant

Note: Level of significance is 0.05

The relationship between the health related effects does not depend on the amount of time spent on online games. Table 13 shows the relationship between the amount of time spent on health related effects of online gaming. The P-value of 0.098, 0.221 and 0.607 indicates that the researcher failed to reject the null hypothesis since the P-value is greater than 0.05 alpha level which implies no significant relationship between variables related. This implies that the physical, mental and emotional effects of online gaming are not dependent on the number of hours spent for gaming. The rejection of the null hypothesis further implies that these findings is only true to our sample but not true to the population of online gamers.

Thematic Analysis of the Qualitative Data

The researchers conducted an interview. This is to further determine experiences of the chosen respondents in relation to online gaming. The experiences may vary from one user to another.

Here are the following themes together with the supporting answers/statements of the inteviewees:

Theme No. 1: Factors resulting to the inclination of online games

According to the interviewees, there are factors that entice the participants to engage in online gaming. One interviewee said,

"Family bonding, bonding na namo sa akong mga igsuon, stress reliever pud"

Another interviewee said,

"**Lami sya sa feeling, basta nindot sya sa feeling kay murag maayo ka anang butanga, kay wa man mi ni excel sa sports, murag ana nalang namo gibawi"**

Two of the interviewees said,

"Sress reliever"

Another one also said,

"Boredom lang gyud akoa"

One of the interviewees also stated,

"Kill the time"

Another also stated,

"Yes, stress gikan sa duty, sa skwelahan, exam nya nahagbong murag mao bitaw maka cope up nimo, malingaw ka ba, mawa sa imong huna-huna ang mga stressors nimo, nya anha ka mamalikas".

Theme No. 2: Positive and Negative Effects of Online Gaming

As what the answers of the interviewees during the interview, there are positive and negative response with regards to online gaming in terms of physical and emotional aspect,

In regards to neglected self-care, one interviewee said,

"Labi na ug naa sa balay, dili na jud maligo".

Another one said,

"Yes, **Sometimes, samot na ug malingaw na kaayo, kanang thrilling na kaayo bitaw. Kasagaran kay kaon madugay ko ana.**

One interviewee disagreed in respond to the answer stated,

"Dili pud tanan, kana rang kaon pero kanang uban dili nya exercise pud, dili man jud maka exercise ang duwa".

With regards to the sleeping pattern, all interviewees stated that they all stayed up late to play online games, one exclaimed,

"YES, karon gani wala gani tog."

In the time they normally play, one interviewee said,

"Kadlawn pud kay kusog internet."

And was supported by 3 other interviewees, stated,

"kadlawn, anytime, 10pm-4am."

"10 upwards, 10pm-5am ug walay klase kung naa dili."

"ako kay bisan unsa man orasa bisan magklase kay magduwa man ko usahay."

In regards to the alleviation of negative mood states and a cope to stress, one interviewee said,

"**Yes, ana nalang paagi usahay aside sa mag away, mag duel nalang ug duwa."**

When they were asked if online gaming has affected their life, all responded **"neither", they don't know if online gaming has affected their life in a positive or negative way.**

In regards to physical, mental, and emotional problems experienced as what they perceived, one interviewee said,

"**Draining kaayo sa physical, sakit sa kamot, sakit sa mata, sa emotional pud di ba mapildi ka? Masungot man jud ka. Depende ra sa duwa."**

Another two stated,

"Kung ako malingaw ra ko kay di man ko parehas sa ilaha nga ML, chill ra man akong mga duwa nya sige ra ko ug design ug balay pero kasagaran ana sakit sa mata kay nitutok baya ka sa gadget nimo."

"Depende sa outcome sa duwa nya kung maayo imong duwa lami kaayo ang mood, pero kung dili putang ina."

The remaining interviewees also agreed to the statement mentioned by other interviewees.

When asked why they still keep on playing despite experiencing what was mentioned as the physical and emotional problems, one of the interviewee answered,

"Lingaw, bahalag sakit ang mata lingaw man gihapon."

Another also said,

"Lingaw, lingaw ra jud."

Other interviewee stated,

"Huwat ra ug makabati ug grabe usa mo hunong ug duwa."

Another also stated,

"**As of now wala kay dili paman pud grabe ang nabati."**

The other interviewee talked about moderation in playing, stated,

"Ako before straight gyud ko duwa from 10 pm to 4 am or 6 am, straight gyud na walay pahuway karon kay pahuway mga duha ka oras ganahan mo duwag balik, duwag balik mo take nakog kuan para dili btaw ma strain akong mata especially karon nga nisamot ug kadaot akong mata mao nang ok kanang in moderation sa lang mabuta nako kadugayan ani."

The other remaining interviewees also agreed that they are having fun, and they don't care despite experiencing physical and emotional problems.

In regards to what they think about online gaming, one interviewee said,

"State of the power of reality, murag to escape from real world because life without online games people who do not have funs people will kill each other, declare wars so the chances of having world war 3 is not that high, if there is online games rather than there is xenophobia against other countries there's somewhat unity."

Another also stated,

"Murag addiction."

In connection to the Health Belief Model of Rosenstock, the researchers related the respondents' answers regarding online gaming with the 4 variables; Perceived Susceptibility, Perceived Severity, Perceived Benefit, and Perceived Barriers.

In the **Perceived Susceptibility** of the respondents, they stated that online gaming is neither positively or negatively affects their life.

In the **Perceived Severity** of the respondents, they stated that they neglected self-care specifically in bathing, eating and exercise. They also stayed up late and continued to play despite experiencing eye pain and other problems stated in the quantitative questionnaire. Furthermore, they stated that online games are addictive.

In the **Perceived Benefit** of the respondents, they stated that online gaming has been a stress reliever and lessen their boredom. However, they stated that they can replace online gaming by many other things such as socialization with other people.

In the **Perceived Barriers** of the respondents, they stated that they experienced eye pain and fatigue when playing online games. Moreover, they stated that they will not change unless they experience the worst of the symptoms that they have experienced from playing online games.

Findings

Based from the data gathered, it shows the demographic profile of the respondents in terms of:

Age. Majority of the respondents who plays online games aged 20 with a total of 34 out of 117 which has 29.1% while the least number of respondents comes from the age of 27 or only at 0.9%.

Gender. The total number of respondents from all the listed courses is 117 and 83 (70.9%) of the respondents were male students, while the 34 (29.1%) of the respondents were female students.

Course. In getting the respondents, the researchers in collaboration with the statistician agreed to gather 117 students from the total population of the college students. Majority of the respondents are from the Bachelor of Science in Nursing with a total number of 27 respondents and with a percentage of 23.1% while the least number of respondents are from the Bachelor of Science in Computer Studies and Bachelor of Science in Medical Technology which each has only 1 respondent with a percentage of 0.9%.

2. **Respondents' manner of Online Gaming regarding in terms of:**

Time. According to the respondents, the usual time they play online games is during night time and the least time of the day is during dawn. Also in the qualitative

research focus group discussion, the respondents normally played online games between 10pm-4am or 5am (dawn).

Duration and Frequency. According to the respondents, 2-3 hours per day spent in playing with a total of 53 respondents out of the total 117 and with a percentage of 45.3 %. While the 8 hours and above bracket has the least number of frequency with a total of 11 and with a percentage of 9.4 %.

Gadget utilized. Majority of the students used cellphones for online gaming with a 108 out of 117 respondents with a percentage of 76.1% while the least utilized is tab/iPad which has a 4 frequency with a percentage of 2.8%. Also in the qualitative research focus group discussion, the respondents answered cellphones as their gadget in online gaming.

Connection. Mobile data is the most on the type of connection used in online gaming with a total of 90 respondents with a percentage of 38.6% while internet cafés is the least type of connection with a total of 24 with a percentage of 10.3%. On the other hand, in the qualitative research focus group discussion the respondents answered that they used Wi-Fi connection when playing online gaming.

Type of Game. The respondents mostly played action and adventure games with a total of 97 out of 117 respondents with a percentage of 82.9%. It is roughly followed by strategy games with a total of 92 respondents and a percentage of cases 78.6 % and the third most common type of game played is the massively multiplayer online games with a total of number of 82 or with a percentage of cases of 70.1%. While the game that the respondent least played is the simulation game which comprises only 1 with a percentage of 0.9%. On the other hand, in the qualitative research focus group discussion the respondents answered that they usually played strategic type of games.

3. **Respondents' perception on the effects in online gaming in terms of:**

Physical Health. The most common physical effects that the respondents experienced is poor nutrition with 45 out of 117 respondents or a total percentage of 38.5 % with a qualitative description of rarely. While the least physical effects of online gaming the respondent experiences is tearing of eyes which has a frequency of 33 and with a total percentage of 28.2% with a qualitative description of sometimes. On the other hand, in the qualitative research focus group discussion the respondents answered that they commonly experienced eye pain.

Mental Health. Poor concentration has the highest frequency in terms of mental effects on the respondents with a frequency of 41 and with a percentage of 35.0% with a qualitative description of rarely . Moreover, impulsive is the least mental effects of online gamers with a frequency of 50 and with a corresponding percentage of 42.7 % with a qualitative description of never.

Emotional Health. Happy has the highest frequency in terms of emotional effects on the respondents with a frequency of 54 and with a percentage of 46.2% with a qualitative description of always. Moreover, being depressed is the least emotional effects of online gamers with a frequency of 63 and with a corresponding percentage of 53.8%. On the other hand, in the qualitative research focus group discussion the respondents answered that they felt in a state of bad mood especially when losing a game however it gives them fun.

In the summary of the qualitative research focus group discussion, most of the respondents answered that boredom and stress reliever are the factors that lead them to play online games. All of the respondents agreed that online games relieve their stresses from duty and exams also neither positive nor negative online gaming has affected their life. They mentioned that online gaming makes them experience eye pain and in a state of bad mood especially when losing a game but despite of experiencing those problems/consequences mentioned, they still play because it gives fun for them. The respondents mentioned that they can replace online gaming with many other things such as clubbing, sleeping, reading, drinking alcohol, washing clothes, hang out with friends and watching TV. In order for them to lessen their engagement with online games they would socialize with people. Most of the respondents answered that online games are addictive that they will not change or lessen playing online games unless they will experience the worst of the symptoms that they have experienced from playing online games.

Conclusions

Most of the students are now engaged with online gaming. Online gaming has both positive and negative effects to physical, mental and emotional health of the respondents either male or female gamers.

Majority of the gamers regarded online gaming as a stress reliever, uplift one's emotion though negative effects also occurs but its positive effects outweighs the negative ones.

There is no significant relationship between the amount of time spent on online gaming and health related effects of the students.

Recommendations

Grounded on the findings of the study, the following recommendations are proposed :

1. Tailored Health Education Programs

Recognizing the demographic characteristics of the respondents, particularly the predominance of males , health education programs should be tailored to impart the effects of online gaming on students on their physical, mental and emotional health.

2. Educational and Counselling Programs

The students should be informed of the detrimental effects on the excessive online gaming and imparting preventative measures in the form of educational and counseling programs for students regarding the proper and practical use of the Internet in their education process and not excessively for online gaming.

3. Monitoring and Control

Monitoring and control be exercised on how the Internet is used by university students, and they should be informed of the detrimental effects of this technology in the case of misuse or overuse.

4. Address the issues and problems relating to communication technologies, such as the Internet, can lay the groundwork for proper education and instigate parents' and families' further attention to proper and effective use of the Internet on the education of the students.

5. Stress relief: Gaming can be a stress-relieving activity for students, helping them to unwind and relax after a long day.

6. Increased motivation: Achieving goals and progressing through levels in online games can be motivating for students, encouraging them to work hard and strive for success in other areas of their lives as well.

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ON PAIRED SAMPLES T-TEST: APPLICATIONS, EXAMPLES AND LIMITATIONS

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ABSTRACT

The paired samples t-test is a commonly used statistical procedure for comparing the means of two paired populations to determine their equality. In this paper, the applications, examples and limitations of paired samples t-test are illustrated using real data employing the Statistical Package for Social Sciences, a prominent software tool for the said test.

Keywords: *Paired samples t-test, two matched groups, paired populations, mean difference*

INTRODUCTION

In a mathematical approach to hypothesis tests, we start with a clearly defined set of hypotheses and choose the test with the best properties for those hypotheses. In practice, we often start with less precise hypotheses. For example, often a researcher wants to know which of two groups generally has the larger responses, and t-test could be acceptable (Fay & Proschan, 2010). A paired-samples t-test compares the mean of two matched groups of people or cases, or compares the mean of a single group, examined at two different points in time (Ross et al., 2017). It is one of the widely-used statistical procedures for comparing the equality of the means of the two paired populations. The basic underlying assumption of the test is that observations should meet certain preconditions, such as normality, equal variances and independence (Park et al.,

2020; Kim, 2015). Many researchers employ the paired t-test to evaluate the mean difference between matched data points (Hedberg & Ayes, 2015).

Research Objectives

This research study was guided by the following objectives:

1. To define paired samples t-test;
2. To provide readers with the use and practicability of paired samples t-test; and
3. To lay down the limitations of paired samples t-test.

METHODOLOGY

The purpose of this paper was to examine the applications, examples, and limitations of the paired-samples t-test. The primary approach involved conducting a comprehensive literature review. Various sources, such as scholarly articles, textbooks, and online resources, were searched using specific keywords like "paired samples t-test" and "limitations of t-test" to find relevant information. Only sources that clearly explained the applications of the test, provide real-world examples, or discuss its limitations and assumptions were included. Studies that focused on alternative tests or lack a connection to the applications, examples, or limitations of the paired-samples t-test were excluded. The collected literature was analyzed to identify key themes regarding the t-test. Important points and relevant data will be recorded. Furthermore, the methodology incorporated illustrative examples to demonstrate the practical use of the paired-samples t-test in real-world scenarios. This approach aimed to establish a clear framework for exploring the usefulness of the paired-samples t-test.

RESULTS AND DISCUSSION

This section presents the results and discussions of the study.

Applications of paired samples t-test

The paired sample problem denotes situations in which two measurements are taken from the same object or individual to determine whether there is statistical evidence that the mean difference between paired observations is significantly different from zero (Grzegorzewski, 2022). The SPSS software is a very common statistical software in educational research that can be used to analyze the differences of a variable after being given treatment. One of the variables that can be analyzed is the difference in student learning outcomes. Teaching materials used in learning can cause differences in student learning outcomes (Afifah et al., 2022). Taking the Excel and SPSS analysis of the independent sample t test as an example, the inference analysis process of randomly designing two sample data is explained, and the actual analysis is solved by comparing the analysis results of the two processes in the experimental study. For the two independent sample t-tests, the data obtained by using the Excel tool is complete and

more accurate, but the operation is complicated. The SPSS tool is simple and convenient to operate, but the data is not accurate by Excel (Gao et al., 2018).

Examples of paired samples t-test

A group of Sports Science students (*n* = 20) are selected from the population to investigate whether a 12-week plyometric-training programme improves their standing long jump performance. In order to test whether this training improves performance, the students are tested for their long jump performance before they undertake a plyometric-training programme and then again at the end of the programme (i.e., the dependent variable is "standing long jump performance", and the two related groups are the standing long jump values "before" and "after" the 12-week plyometric-training programme) (Laerd Statistics, 2023).

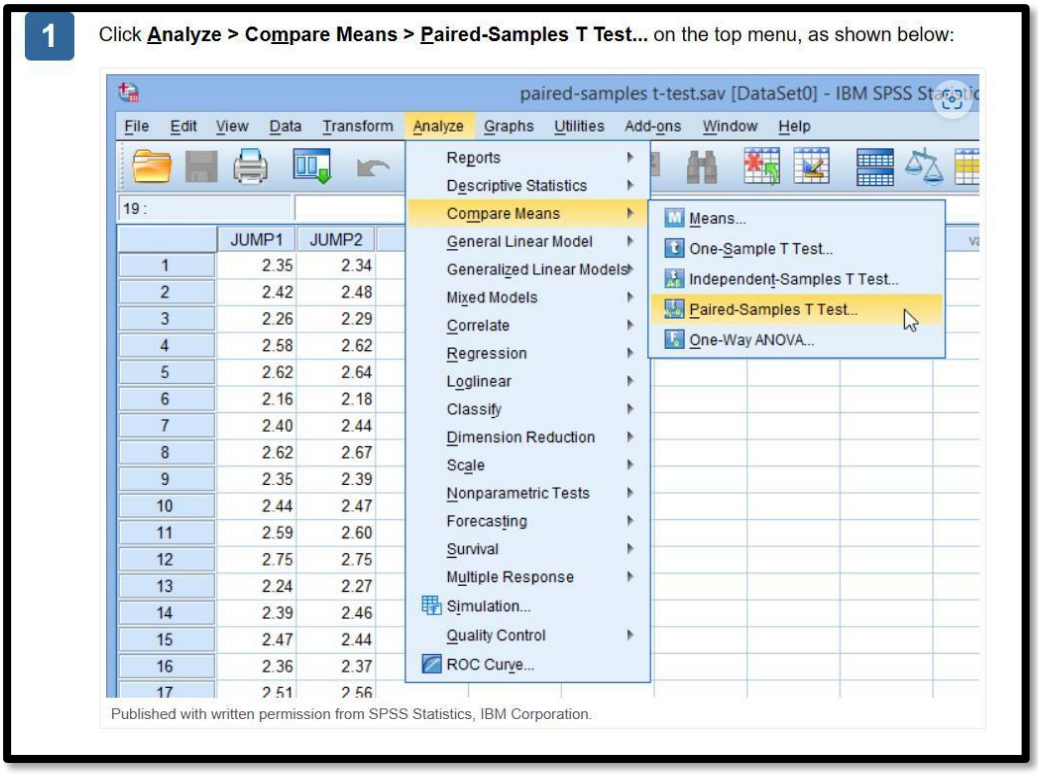


Figure 1: Step 1 of the data analysis

Source: https://statistics.laerd.com/spss-tutorials/dependent-t-test-using-spss-statistics.php

2 You will be presented with the **Paired-Samples T Test** dialogue box, as shown below:

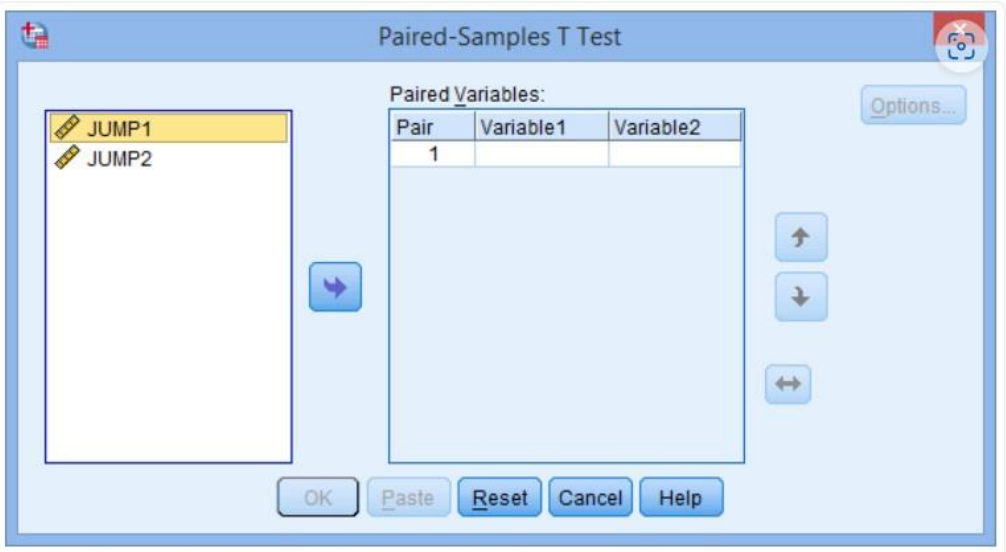


Figure 2: Step 2 of the data analysis

Source: https://statistics.laerd.com/spss-tutorials/dependent-t-test-using-spss-statistics.php

3 Transfer the variables JUMP1 and JUMP2 into the Paired Variables: box. There are two ways to do this: (a) click on both variables whilst holding down the shift key (which highlights them) and then pressing the button; or (b) drag-and-drop each variable separately into the boxes. If you are using older versions of SPSS Statistics, you will need to transfer the variables using the former method. You will end up with a screen similar to the one shown below:

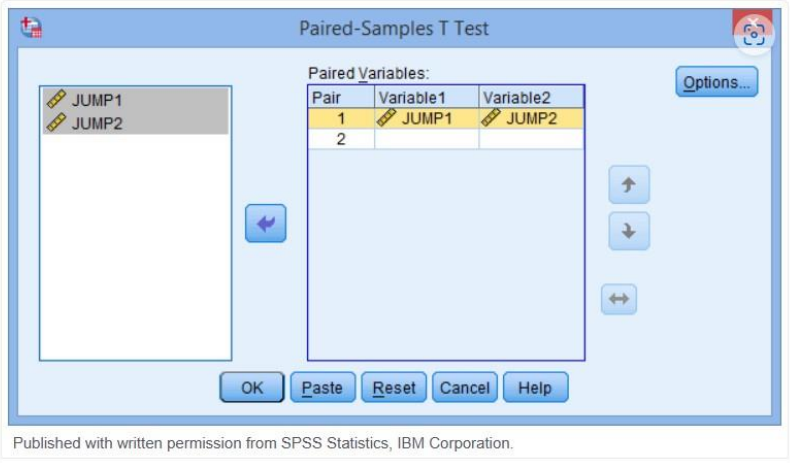


Figure 3: Step 3 of the data analysis

Source: https://statistics.laerd.com/spss-tutorials/dependent-t-test-using-spss-statistics.php

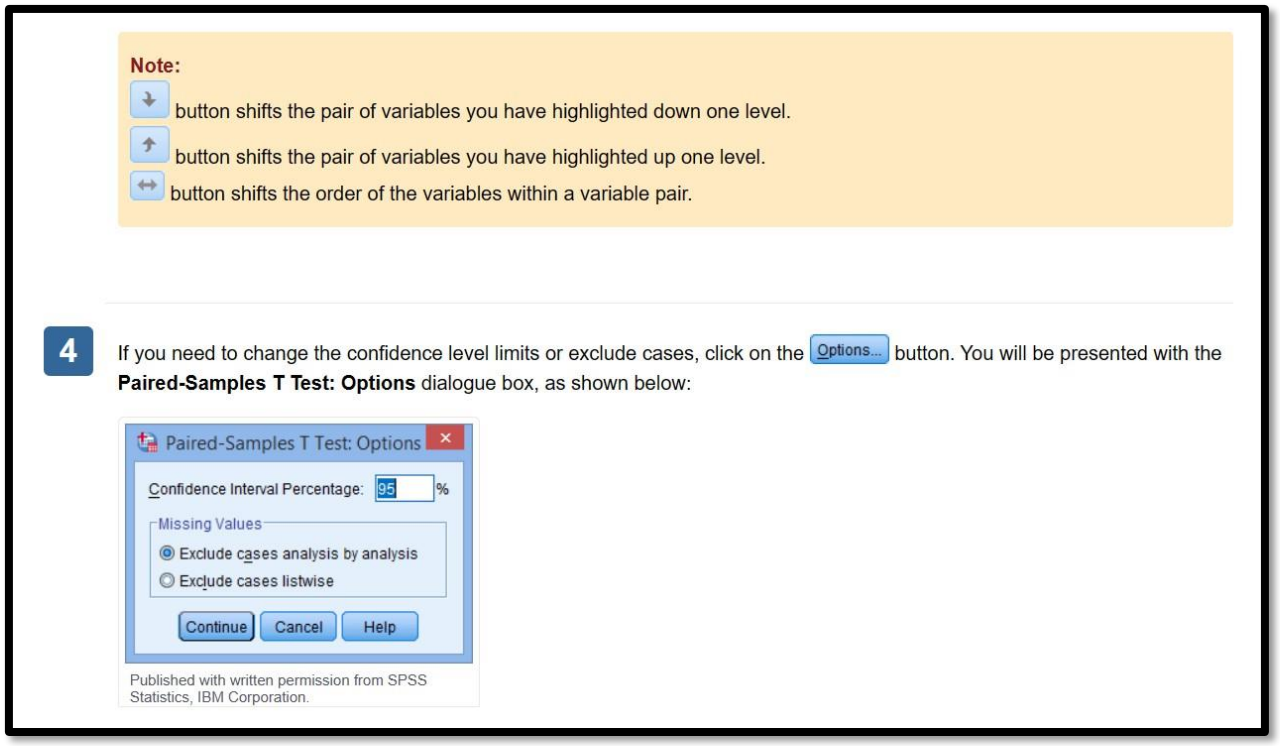


Figure 4: Step 4 of the data analysis
Source: https://statistics.laerd.com/spss-tutorials/dependent-t-test-using-spss-statistics.php

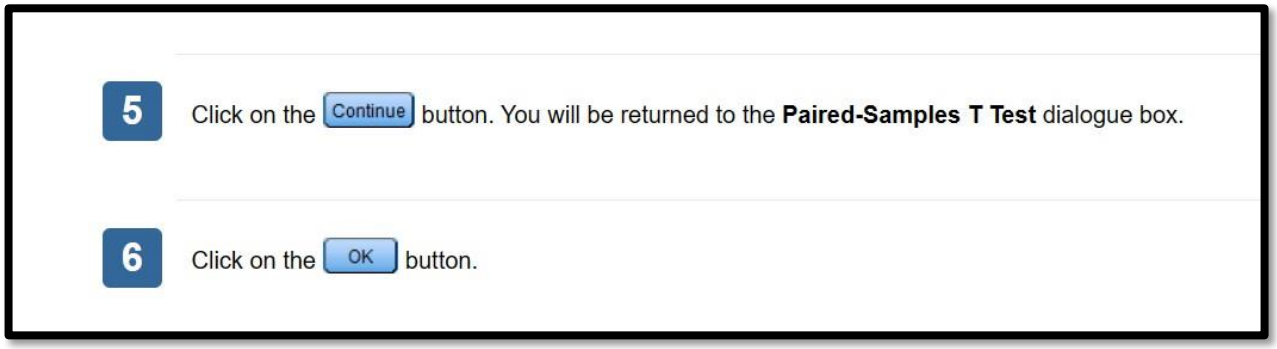


Figure 5: Steps 5 and 6 of the data analysis
Source: https://statistics.laerd.com/spss-tutorials/dependent-t-test-using-spss-statistics.php

SPSS Statistics

Output of the Dependent T-Test in SPSS Statistics

SPSS Statistics generates three tables in the **Output Viewer** under the title "T-Test", but you only need to look at two tables: the **Paired Samples Statistics** table and the **Paired Samples Test** table. In addition, you will need to interpret the boxplots that you created to check for outliers and the output from the Shapiro-Wilk test for normality, which you used to determine whether the distribution of the differences in the dependent variable between the two related groups were approximately normally distributed. This is explained in our enhanced guide. However, in this "quick start" guide, we focus on the two main tables you need to understand if your data has met all the necessary assumptions:

Paired Sample Statistics Table

The first table, titled **Paired Samples Statistics**, is where SPSS Statistics has generated descriptive statistics for your variables. You could use the results here to describe the characteristics of the first and second jumps in your write-up.

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	JUMP1	2.4815	20	.16135	.03608
	JUMP2	2.5155	20	.15982	.03574

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Figure 6: Output of the paired samples t-test

Source: https://statistics.laerd.com/spss-tutorials/dependent-t-test-using-spss-statistics.php

Paired Samples Test Table

The **Paired Samples Test** table is where the results of the dependent t-test are presented. A lot of information is presented here and it is important to remember that this information refers to the **differences** between the two jumps (the subtitle reads "Paired Differences"). As such, the columns of the table labelled "**Mean**", "**Std. Deviation**", "**Std. Error Mean**" and "**95% Confidence Interval of the Difference**" refer to the mean difference between the two jumps and the standard deviation, standard error and 95% confidence interval of this mean difference, respectively. The last three columns express the results of the dependent t-test, namely the *t*-value ("**t**"), the degrees of freedom ("**df**") and the significance level ("**Sig. (2-tailed)**").

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
					95% Confidence Interval of the Difference				
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper			
Pair 1	JUMP1 - JUMP2	-.03400	.03185	.00712	-.04891	-.01909	-4.773	19	.000

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You are essentially conducting a one-sample t-test on the differences between the groups.

SPSS Statistics

Reporting the Output of the Dependent T-Test

You might report the statistics in the following format: *t*(degrees of freedom) = *t*-value, *p* = significance level. In our case this would be: *t*(19) = -4.773, *p* < 0.0005. Due to the means of the two jumps and the direction of the *t*-value, we can conclude that there was a statistically significant improvement in jump distance following the plyometric-training programme from 2.48 ± 0.16 m to 2.52 ± 0.16 m (*p* < 0.0005); an improvement of 0.03 ± 0.03 m.

Figure 7: Paired samples t-test table and reporting the output

Source: https://statistics.laerd.com/spss-tutorials/dependent-t-test-using-spss-statistics.php

Limitations of paired samples t-test

Some methodologists have cautioned against using the t-test when the sample size is extremely small, whereas others have suggested that using the t-test is feasible in such a case (De Winter, 2019). For designs that only involve factors with two levels each, the paired t test can be used for power calculations, but some pitfalls need to be avoided (Langenberg et al., 2023). For most non-parametric models, the Bahadur–Savage result yields that the size of the t-test is one for every sample size. Even if we restrict attention to the family of symmetric distributions supported on a fixed compact set, the t-test is not even uniformly asymptotically level α. However, the convergence of the rejection probability is established uniformly over a large family with a very weak uniform integrability type of condition. Furthermore, under such a restriction, the t-test possesses an asymptotic maximin optimality property (Romano, 2004).

There are at least six assumptions of paired samples t-test:

1) Your dependent variable should be measured on a continuous scale (i.e., it is measured at the interval or ratio level);
2) Your independent variable should consist of two categorical, "related groups" or "matched pairs";
3) There should be no significant outliers in the differences between the two related groups; and
4) The distribution of the differences in the dependent variable between the two related groups should be approximately normally distributed. If a violation to the assumption is not correctable, you will no longer be able to use a dependent t-test (Laerd Statistics, 2023).

Conclusions

Although the paired-samples t-test is a robust method for analyzing paired data, researchers should be aware of its limitations. Small sample sizes can affect the sensitivity of the test. Moreover, it may be necessary to explore alternative non-parametric tests when the normality assumptions are not satisfied.

In summary, the paired-samples t-test is an essential tool for researchers who want to evaluate mean differences in related samples. By recognizing its strengths and limitations, researchers can use this test to draw meaningful conclusions from their data and contribute to advancements in their fields.

Recommendations

This study provides valuable recommendations for researchers, data analysts, and educators regarding paired-samples t-tests. Researchers should carefully consider whether the paired t-test is suitable for their study design, particularly when working with related samples or pre-post intervention measurements. It is crucial to understand the assumptions of normality and homogeneity of variance. If these assumptions are violated,

alternative tests or data transformations may be necessary. Both researchers and readers should be aware that small sample sizes can affect the sensitivity of the test. Lastly, data analysts should clearly report the test statistic, degrees of freedom, and p-value to ensure proper interpretation of the results. Educators can utilize this knowledge to emphasize the paired-samples t-test as a fundamental tool for analyzing data from related samples, highlighting its applications, assumptions, and limitations. By following these recommendations, researchers, data analysts, and educators can ensure the effective use and understanding of this valuable statistical test.

Compliance with Ethical Standards

The authors of this study assure that ethical procedures were strictly followed.

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OPTIMIZING HEALTH CARE: A COMPREHENSIVE STUDY ON PREVENTION PRACTICES IN NOSOCOMIAL INFECTION IN SELECTED HOSPITALS

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ABSTRACT

This study determined the prevention practices among healthcare workers in different hospitals in Eastern Pangasinan. It tackled their age, gender preference, civil status, highest educational attainment, professional area, number of years in service, area of assignment, employment status, and hospital facility. The study utilized the descriptive research design and a survey questionnaire as the main tools for gathering data. Several statistical tools were used, such as frequency and percentage, weighted mean, t-test, Scheffe test, and ANOVA (Analysis of Variance). The healthcare worker respondents were mainly young adults, women, singles, and bachelor's degree holders; most were nurses in the service for more than five years, primarily assigned to OPD/ER, regular employees. The preventive practices among healthcare workers are the highest regarding personal hand hygiene and protective equipment. The gender preference of the health workers affects their preventive practices to control nosocomial infections, while environmental preventive practices do not affect the healthcare workers to prevent nosocomial infections. Women healthcare workers are more meticulous in rendering their nursing care compared to the males, and the area of assignment of the health workers significantly affects their preventive practices to control nosocomial infections. The main ways to protect a patient from infections from other patients and healthcare providers are through aseptic technique, personal protective equipment and environmental infection control measures. Furthermore, the proposed effective measures for mitigating the risk of healthcare-related infections, namely sterilization of equipment, waste segregation, provision of adequate PPEs, sanitizers, and antiseptics, hospital ventilation, clean environment and hand hygiene.

Keywords: *Efficiency, Enhancing, Nosocomial infections, Practices, Preventive*

INTRODUCTION

Nosocomial infections commonly occur in hospitals. The patients who are admitted are most commonly affected. Patients and healthcare professionals bring microbes inside the hospitals, and they pass them on to other people. Individuals carry these germs without being sick, and they spread them to others without knowing. The immune system becomes weak to fight the microbes. To be considered nosocomial, the infection must not be present at admission but must develop at least 48 hours after admission. These infections can lead to severe problems like sepsis and even death Cheung, J. (2023). When sick, the body's immune system goes down, making the patient vulnerable to the infection. Microbes are transferred to persons by merely handling surfaces like doorknobs and other tools used for the patient. These illnesses can be encountered in both private and public hospitals. When these infections occur while in the hospital, they lead to more extended hospital stays and illness. While in the hospital, patients are exposed to illnesses from various sources, including medical professionals and other sick patients.

Microorganisms can be transmitted during coughing, sneezing, talking, and suctioning and are expelled before settling onto a surface. It causes the infection to be deposited directly into a susceptible person's body or environmental surfaces and then touched by a susceptible person. Contact transmission is the most crucial and frequent mode of communication in health care. Organisms are transferred through direct contact between an infected and a susceptible healthcare worker or another person. Patient organisms can be transferred to the intact skin of a healthcare worker and then transferred to a susceptible patient who develops an infection. An infected patient touching a doorknob, then touched by health care workers and transferred to another patient (Collins, 2023). It clearly states that infections can enter the body quickly through different mediums.

According to the Centers for Disease Control and Prevention (CDC), hand hygiene is the single most important practice in the prevention of transmission of infection in the healthcare setting. Studies showed that hygiene's importance must be adequately recognized amongst healthcare professionals, and compliance needs to be higher. Contaminated hands of healthcare providers are a primary source of microbial spread. Proper hand hygiene decreases the growth of microorganisms, reducing infection risk and length of hospital stay (Butler et al., 2023). Hand hygiene is the simplest method to prevent microbes from entering the body. The wards must have adequate water supply to cleanse spoiled hands.

Personal Protective Equipment (PPE) is a barrier between infectious materials and the skin, mouth, nose, or eyes. The barrier blocks the transmission of contaminants from blood, body fluids, or respiratory secretions. PPE protects patients from contracting infections through a surgical procedure, a medical condition, or exposure to substances

or infectious material brought in by visitors and healthcare workers. When used correctly and with other infection control practices such as hand-washing, using alcohol-based hand sanitizers, and covering coughs and sneezes, it minimizes the spread of infection from one person to another. Effective use of PPE includes appropriately removing and disposing of contaminated PPE to prevent exposing both health workers and other people to infection (FDA, 2020). PPE provides a barrier to minimizing workplace hazards that healthcare providers encounter from harmful exposures. Contamination threats are encountered throughout healthcare (Kening & Groen, 2023). PPE is specialized equipment used to provide a barrier between individuals and microorganisms. This barrier reduces the likelihood of touching or transmitting pathogens. Keep everyone safe from illness.

According to the World Health Organization (WHO) (2018), 85% of healthcare waste is solid from used medical supplies, packaging, cleaning products, and food waste. All waste has the potential to contaminate groundwater supplies and pollute the environment with pathogens and toxins. According to the International Council for Nurses, the nursing profession world-wide recognizes the vital role the natural environment plays in global health and acknowledges the real threat posed by medical waste. Aside from using sanitizers and PPEs, the nurse also ensures that the wastes are properly disposed of in color-coded trash bins, depending on the waste category. Nurses in clinical care are producers of medical waste and are active participants in waste disposal procedures. They are also involved in developing policies that deal with the procurement of supplies as well as the production and elimination of medical waste.

Theoretical/Conceptual Framework:

This study utilized the Change Theory of Nursing developed by Kurt Lewin. He theorized a three-stage model of change known as the unfreezing-change-refreeze model that requires prior learning to be rejected and replaced. The Change Theory has three major concepts: driving forces, restraining forces, and equilibrium. Driving forces push in a direction that causes change to occur. They facilitate change because they move the patient in the desired direction. They cause a shift in equilibrium toward change. Restraining forces are those forces that counter the driving forces. They hinder change because they push the patient in the opposite direction. They cause a shift in equilibrium that opposes change. Equilibrium is a state of being where driving forces equal restraining forces and no change occurs. Changes between the driving and restraining forces can raise or lower it.

This theory has been adapted because changes must be made to prevent infections while the patient is admitted to the hospital.

This study focused on the comprehensive research of preventive practices to control nosocomial infection among healthcare workers in selected hospitals in Pangasinan. Box number 1 is the input that dealt with the respondents' profile and the preventive practices among healthcare workers. Box number 2 is the process focused on the data gathering, interpretation, and analysis of findings, and Box number 3 is the

output, which deals with the proposed preventive measures for mitigating the risk of healthcare-related infection.

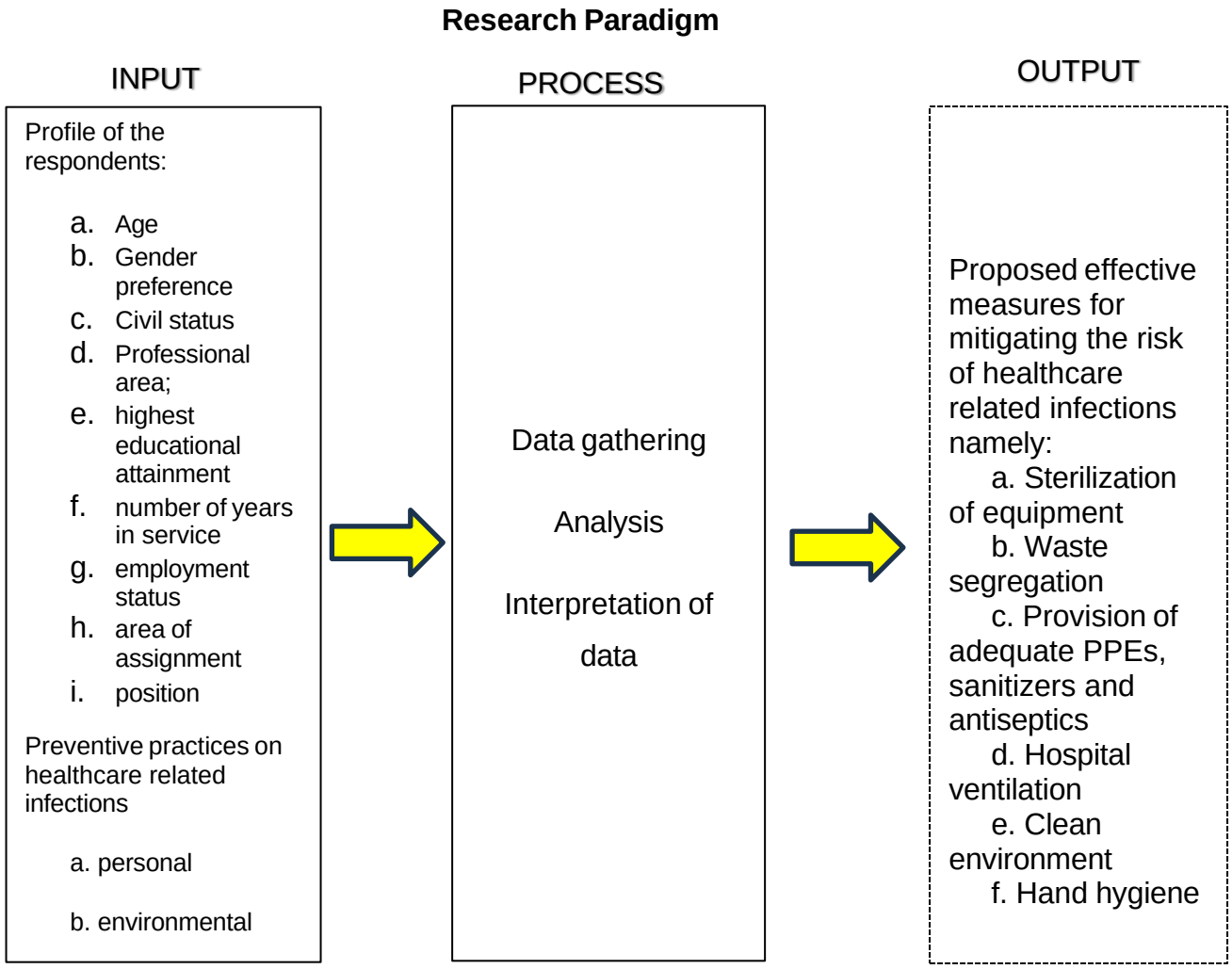


Figure 1. Paradigm of the study

Research Questions

In this context, the researcher is interested in conducting the study to determine nurses' preventive practices to prevent the occurrence of nosocomial infections in hospitals and to share preventive strategies that could assist and improve healthcare professionals' knowledge**.**

This study determined the preventive practices to control nosocomial infection among selected hospitals in Pangasinan.

Specifically, it sought to answer the following questions:

1. What is the profile of the respondents in terms of their;
    a. age;
    b. gender;
    c. civil status;
    d. highest educational attainment;
    e. professional area;
    f. number of years in service;
    g. employment status;
    h. area of assignment; and
    i. type of facility?
2. What are the preventive practices performed by healthcare workers to control nosocomial infections?
a. Personal
    a1. Hand hygiene, and
    a2. personal protective equipment
b. Environmental
    b1. Hospital ventilation,
    b2. Sterilization equipment and patients' area room,
    b3. Water sanitation, and
    b4. Waste segregation?
3. Is there significant relationships between the preventive practices perform by healthcare workers to control nosocomial infection across their profile variables?
4. Is there significant difference between the preventive practices perform by healthcare workers to control nosocomial infection across their profile variables?
5. Based on the findings, what proposed effective measures for mitigating the risk of healthcare related infections?

Null Hypothesis

The study was tested in its null form at the 0.05 level of significance, that is,

1. There is no significant relationship between the preventive practices performed by healthcare workers to control nosocomial infections across their profile variables.
2. There is no significant difference between the preventive practices performed by profile variables.

METHODOLOGY

The research approach is presented in this chapter and includes discussions on the research design, subjects of the study, sampling scheme, data gathering instruments, data gathering procedures, statistical treatment of data, and tools for data analysis.

Research Design

The research utilized the descriptive approach, applying the questionnaire as a data gathering tool to determine the preventive practices of health care workers in nosocomial infections in selected hospitals. According to Best (2015); descriptive research is a process that goes beyond the mere gathering together with data tabulation. Interpreting the importance and meaning of the described material is a necessary component. Thus, description is often combined with comparison and contrast involving measurements, classifications, interpretation, and evaluation.

Population and Locale of the Study

The study's respondents were healthcare workers in selected hospitals in Pangasinan who are currently employed in health facilities. They are nurses, medical doctors, midwives, medical lab workers, and rehabilitation workers. To represent the population, purposive sampling was used and was delimited to the healthcare workers assigned to the different areas of the hospital.

Data Gathering Tool

The study utilized a survey questionnaire based on previous studies and articles related to the study, particularly Butler et al. (2023). Part I focused on the profile of the respondents in terms of their age, gender preference, civil status, highest educational attainment, professional area, number of years in service, employment status, and type of hospital facility. Part II dealt with preventive practices among healthcare workers to control nosocomial infection through personal use of PPE and environmental measures such as hospital ventilation, sterilization of equipment, water sanitation, and waste segregation.

Validation of Instrument

To gather information from the respondents, a questionnaire was used. The questions about the nosocomial infection prevention practices in a selected hospitals were taken from a number of academic articles. Nevertheless, experts in the medical and nursing areas, including physicians, nurses, lab technicians, academic researchers, and educators with training in infection control, verified it. The whole rating showed a very high degree of validity.

Data Gathering Procedures

Before gathering data, the researcher secured permission from the Dean of the Institute of Graduate and Advanced Studies to conduct the study. When permission was granted from the Institute of Graduate and Advanced Studies, the researcher requested and coordinated with the Chief of Hospitals through the Chief Nurse to collect the necessary data from the specified respondents. When approval is acquired from the

institutional management, the researcher meets with the respondents to determine a suitable schedule for distributing the research instruments. Following that, the researcher assisted the research tools personally in dealing with any doubt or misunderstanding on the part of the respondents as they dealt with the various questions in the instruments.

Treatment of Data

For Problem No. 1 on the respondent's profile, frequency and percentage were used. The frequency was determined based on the number of respondents who answered or checked a particular item on the questionnaire.
Formula:

$$P = \frac{F\ X\ 100}{N}$$

where: P = percentage

F = frequency

N = total number of respondents

For problem No. 2, on the preventive practices in the control of nosocomial infection, the weighted mean was used. A weighted mean is the mean of a set of values, wherein each value or measurement has a different weight or degree of importance. This study used a five-point rating scale system, as shown in the table below.
Formula:

$$\overline{x} = \frac{\sum fi}{N}$$

where: $\overline{x}$ = weighted mean

N = total # of population; and

fi = frequencies corresponding to the given items.

Literal Value	Statistical Limit	Descriptive Equivalent	Transmuted Rating
A	4.50 – 5.00	Always	Highly Knowledgeable
B	3.50 – 4.49	Often	Knowledgeable
C	2.50 – 3.49	Sometimes	Moderately Knowledgeable
D	1.50 – 2.49	Seldom	Slightly Knowledgeable
E	1.00 – 1.49	Never	Not Knowledgeable

For Problems No. 3 and 4 on the significant differences and relationships between the preventive practices to control nosocomial infection, Analysis of Variance was used to test the difference, whereas Chi-Square was used to test the relationship between variables

Analysis of Variance (ANOVA)

$$F = \frac{MSb}{MSw}$$

Where:

MSb-Mean Square Between
MSw-Mean Square Within
Chi-Square

$$X2 = \sum \frac{(O-E)2}{E}$$

Where: O =observed number of cases

$$E = \frac{\text{(row total) (column total)}}{\text{Grand total}}$$

RESULTS AND DISCUSSION

This chapter presents the findings of the study based on the data gathered from the nurse respondents.

Part I. Table 1 presents the characteristics of the respondents, including age, marital status, greatest level of education attained, years of service, work status, and kind of hospital facility.

Age. It can be gleaned from the table that the majority of the respondents are in the age bracket of 31–40 years old with a frequency of 53, or 53 percent, followed by 21–30 years old with a frequency of 36, or 36 percent, 51 and above with a frequency of 5, or 5 percent, and 41–59 years old with a frequency of 5, or 5 percent. It revealed that the respondents were young adults. According to Erikson, 31–40 years old are considered young adults. Young adults need to form intimate, loving relationships with other people. Success leads to strong relationships, while failure results in loneliness and isolation. This stage covers the period of early adulthood when people are exploring personal relationships.

Gender Preference. Most respondents were women, with a frequency of 64 or 64 percent, followed by men, with a frequency of 43 or 34 percent. It showed that most healthcare workers were from the nursing service. It implies that there were more employees in the nursing service as respondents, and nursing is a female-dominated profession.

Civil status. Most of the respondents were single, with a frequency of 62, or 62 percent, followed by married, with a frequency of 35, or 35 percent, and separated, with a frequency of 3, or 3 percent. It revealed that the respondents were not yet into marital relationships and were pursuing their experiences in their field of specialization.

Highest educational attainment. It revealed that the majority of the respondents were bachelor's degree holders, with a frequency of 79, or 79 percent, followed by those with master's units, with a frequency of 10 or 10 percent, master's degree holders, with a frequency of 8, or 8 percent, and doctoral graduates, with a frequency of 8, or 8 percent. It showed that the majority should have pursued a higher level of learning. It is a fact that having a high level of learning will be necessary for professionals.

Table 1

Distribution of Respondents in terms of their Profile Variables

n=100

Profile Variables	Frequency	Percentage
Age (in years)		
21 – 30	36	36.0
31 – 40	53	53.0
41 – 50	5	5.0
51 and above	6	6.0
Gender Preference		
Man	34	34.0
Woman	64	64.0
Transgender	2	2.0
Civil Status		
Single	62	62.0
Married	35	35.0
Separated	3	3.0
Highest Educational Attainment		
Bachelor’s Degree	79	79.0
With Master’s units	10	10.0
Master’s Degree	8	8.0
Doctoral Degree	3	3.0

Profile Variables	Frequency	Percentage
Professional Area		
Medical Doctor	7	7.0
Nurse	66	66.0
Midwife	2	2.0
Nursing Aide	8	8.0
Medical Lab	11	11.0
Dentist	2	2.0
Pharmacist	2	2.0
Radiology	2	2.0
Number of Years in Service		
Below 1 year	24	24.0
1 – 2	19	19.0
3 – 4	17	17.0
5 or more	40	40.0
Area of Assignment		
OPD/ER	38	38.0
Medical	19	19.0
Surgical	7	7.0
OB	7	7.0
ICU	6	6.0
OR	8	8.0
DR	2	2.0
Lab	9	9.0
Ward	2	2.0
Pharmacy	2	2.0
Employment Status		
Job Order	13	13.0
Contractual	15	15.0
Casual	19	19.0
Regular	53	53.0
Type of Facility		
Private	42	42.0
Government	58	58.0

Professional area. It showed that the majority of the respondents were nurses, with a frequency of 66, or 66 percent; medical labs, with a frequency of 11, or 11 percent; nursing aides, with a frequency of 8, or 8 percent; medical doctors, with a frequency of 7, or 7 percent; and midwives, dentists, pharmacists, and radiologists, with a frequency of 2, or 2 percent. This reflects that nurses comprise a significant number of professionals

in hospitals because they are the ones who give direct care to patients in every ward or unit of the hospital.

Number of years in service. Most respondents were in the service for five years and above, with a frequency of 40, or 40 percent; below one year, with a frequency of 24, or 24 percent; 1-2 years, with a frequency of 19, or 19 percent; and 3–4 years, with a frequency of 17, or 17 percent. This reflects that the respondents were employed in hospitals for extended periods.

Area of assignment. It can be gleaned that most of the respondents were in the outpatient department/emergency room, with a frequency of 38, or 38 percent; medical ward, with a frequency of 19, or 19 percent; laboratory, with a frequency of 9, or 9 percent; operating room, with a frequency of 8, or 8 percent, surgical/OB ward, with a frequency of 7, or 7 percent; Intensive Care Unit, with a frequency of 6, or 6 percent, and DR/ Ward/Pharmacy, with a frequency of 2, or 2 percent. It reflects that more respondents were taken in the ER/OPD since it is the usual area where it is more convenient to see nurses in hospitals.

Employment status. According to the survey, the majority of participants were regular in their work, with a frequency of 53 or 53 percent; casual, with a frequency of 19 or 19 percent; contractual, with a frequency of 15 or 15 percent; and job order, with a frequency of 13 or 13 percent. This indicates that the respondents were already permanent in their positions. It is a fact that in hospitals, more employees are permanent in their positions.

Type of Facility. It showed that most respondents were employed in a government hospital, with a frequency of 58, or 58 percent, and those in private hospitals, with a frequency of 42, or 42 percent. This reflects that most respondents were employed in government hospitals. According to observations, there are more employees in government hospitals than in private hospitals, depending on the classification level.

Part II. Preventive Practices Performed by HealthCare Workers to Control Nosocomial Infections

The preventive practices performed by healthcare workers to control nosocomial infection were discussed in tables 2 to 8, measuring personal hand hygiene and personal protective equipment; environmental; hospital ventilation; sterilization equipment and patient's area; water sanitation and waste segregation.

Table 2

Preventive Practices of Healthcare Workers to Control Nosocomial Infections along Personal Hand Hygiene
n=100

Indicators	Weighted Mean	Descriptive Equivalent
1. I do palm to palm, right palm over the left dorsum and vice versa, palm to palm with fingers interlaced, backs of fingers to opposing palms, rubbing of thumbs and fingertips.	4.73	HP
2. I rinse my hands and wrists making sure all soap has been successfully washed off	4.82	HP
3. I always have in my pocket alcohol or hand sanitizer for my protection	4.35	P
4. I do hand hygiene before and after performing a clean or aseptic procedure	4.87	HP
5. I wash my hands after an exposure risk to bodily fluids and glove removal	4.93	HP
6. I do hand hygiene after contact with a patient and his immediate surrounding	4.89	HP
7. I perform hand hygiene after touching an inanimate object in the patient's immediate surroundings even if no direct patient contact	4.79	HP
8. I used alcohol-based hand sanitizers for hand hygiene when hands are not visibly soiled	4.71	HP
9. I ensure all surfaces on my both hands get covered with soap and I let it dry completely	4.77	HP
10. I wash for at least 15 to 20 seconds in a vigorous motion to cause friction making sure to include all surfaces of the hands and fingers	4.70	HP
AWM	**4.76**	**HP**

Legend:

Statistical Range	Descriptive Equivalent
4.50 – 5.00	Highly Practiced (HP)
3.50 – 4.49	Practiced (P)
2.50 – 3.49	Moderately Practiced (MP)
1.50 – 2.49	Slightly Practiced (SP)
1.00 – 1.49	Not Practiced (NP)

Preventive Practices of Healthcare Workers to Control Nosocomial Infections along Personal Protective Employment

Table 3

Preventive Practices of Healthcare Workers to Control Nosocomial Infections along Personal Protective Employment

n=100

Indicators	Weighted Mean	Descriptive Equivalent
1. I properly remove and dispose used contaminated PPE to prevent exposing myself and other people to infection.	4.88	HP
2. I protect the patient from injury or the spread of infection or illness by wearing the PPE	4.80	HP
3. I use gowns, mask and gloves to block transmission of contaminants from blood, body fluids, or respiratory secretions	4.86	HP
4. I protect patients who are at high risk for contracting infections through a surgical procedure or who have a medical condition, from being exposed to substances or potentially infectious material brought in by visitors and healthcare workers.	4.80	HP
5. I help protect myself from contamination and to prevent the spread of pathogens to subsequent patients by using gowns and masks	4.83	HP
6. I use gowns, eye googles, gloves and gowns to prevent highly infectious diseases due to exposure to contaminated body fluids	4.78	HP
7. I practice respiratory/cough etiquette to prevent droplet transmission of respiratory pathogens using masks	4.85	HP
8. I use gloves to prevent contact with patient discharges as part of day-to-day duty	4.87	HP
9. I properly dispose used PPE every after duty in designated waste hamper	4.84	HP

10. I used eye googles and an N-95 mask or higher-level respirator for airborne precautions	4.63	HP
AWM	**4.81**	**HP**

Legend:

Statistical Range	Descriptive Equivalent
4.50 – 5.00	Highly Practiced (HP)
3.50 – 4.49	Practiced (P)
2.50 – 3.49	Moderately Practiced (MP)
1.50 – 2.49	Slightly Practiced (SP)
1.00 – 1.49	Not Practiced (NP)

The lowest indicator is item number 3, "I always have in my pocket alcohol or hand sanitizer for my protection," with a weighted mean of 4.35, or "Practiced." It showed that healthcare professionals were aware that alcohol or sanitizers are good ways of preventing the transmission of infection, and they usually have them with them every time they go on their duties. More often than not, hospitals have adequate supplies used by healthcare professionals to clean or sterilize equipment for patients.

Overall, the Preventive Practices of Healthcare Workers to Control Nosocomial Infections along with Personal Hand Hygiene got an average weighted mean of 4.76, or "Highly Practiced." This connotes that healthcare professionals highly utilize hand hygiene because it eliminates germs in their patient care.

Correspondingly, Table 3 revealed the preventive practices of healthcare workers to control nosocomial infections along with Personal Protective Equipment. As gathered from the table, most indicators were rated "Highly Practiced," however, the highest indicators are item numbers 1, 3, and 8, "I properly remove and dispose of used contaminated PPE to prevent exposing myself and other people to infection," and "I use gowns, mask, and gloves to block transmission of contaminants from blood, body fluids, or respiratory secretions," and "I use gloves to prevent contact with patient discharges as part of day-to-day duty," with a weighted mean of 4.86, 4.87, and 4.89, or "Highly Practiced." As cited by the FDA (202), PPE acts as a barrier that potentially blocks the transmission of contaminants from blood, body fluids, or respiratory secretions. PPE protects patients at high risk of contracting infections through a surgical procedure or who have a medical condition from exposure to substances or potentially infectious material.

The lowest indicator is item 10, "I used eye goggles and an N-95 mask or higher-level respirator for airborne precautions," with a weighted mean of 4.63, or "Highly Practiced." It showed that the healthcare workers used different types of PPE to be safe from infection. Disposable masks should be thrown away once they are worn. According to the CDC (2023), N95s provide the most protection. KN95s and medical masks offer the next highest level of security. Cloth masks provide less protection, and surgical N95 masks are merely recommended for medical personnel.

Overall, the Preventive Practices of Healthcare Workers to Control Nosocomial Infections along Personal Protective Equipment got an average weighted mean of 4.81, or "Highly Practiced." It connotes that healthcare professionals highly regard the use of PPE in their clinical duty as their protection because they deal with patients with different illnesses. PPEs are worn to minimize exposure to hazards that cause serious workplace injuries and illnesses.

Preventive Practices of Healthcare Workers to Control Nosocomial Infections along Environmental (Hospital Ventilation)

Moreover, concerning the hospital ventilation, see Table 4. As derived from the table, the highest indicator is item number 2, "The room is cleaned regularly to eliminate foul odor and patient waste materials," with a weighted mean of 4.76, or "Highly Practiced." It reflects that a clean room will help patients recover early from their illnesses since poor ventilation in hospitals is detrimental to patients and others. According to Hudson (2018), appropriate ventilation rates are effective if applied correctly. Air device selection and placement, a clean source or outside air free of contaminants, the removal of pollutants through proper filtration or direct exhaust, and adequate controls capable of maintaining appropriate airflows and pressure relationships ensure that ventilation rates are effective in preventing infection within the hospital environment and ensuring the safety of patients and the public.

Table 4

Preventive Practices of Healthcare Workers to Control Nosocomial Infections along Environmental (Hospital Ventilation)

n=100

Indicators	Weighted Mean	Descriptive Equivalent
1. I open the windows to improve the air quality and reduces the risk of germs spreading in the room	4.55	HP
2. The room is cleaned regularly to eliminate bad odors and patient waste materials	4.76	HP
3. Curtains of the patients room are changed regularly to remove dust and pathogens attached to it	4.53	HP
4. proper ventilation and indoor air quality is maintained to ensure proper infection control and patient safety.	4.62	HP

5. proper maintenance of electric fans and airconditioning units in the wards or private rooms	4.36	P
AWM	**4.56**	**HP**

Legend:

Statistical Range	Descriptive Equivalent
4.50 – 5.00	Highly Practiced (HP)
3.50 – 4.49	Practiced (P)
2.50 – 3.49	Moderately Practiced (MP)
1.50 – 2.49	Slightly Practiced (SP)
1.00 – 1.49	Not Practiced (NP)

The lowest indicator is item 5, "proper maintenance of electric fans and air conditioning units in the wards or private rooms," with a weighted mean of 4.36, or "Practiced." It showed that the hospital's maintenance personnel did their jobs in maintaining the functionality of their equipment. The most important maintenance procedure to guarantee your air conditioner's effectiveness is to regularly clean or replace its filters. According to Energy.gov. (n.d.). "Clogged and unclean filters significantly decrease the effectiveness of a system because they restrict airflow. The most important maintenance procedure to guarantee an air conditioner's efficiency is regularly cleaning or replacing it. Clogged, dirty filters reduce the amount of airflow and significantly reduce a system's efficiency.

Overall, the Preventive Practices of Healthcare Workers to Control Nosocomial Infections along Personal Protective Equipment got an average weighted mean of 4.56, or "Highly Practiced." It connotes that the healthcare workers were very aware of the use of PPEs in the prevention of hospital-acquired infections. During the COVID-19 surge, everyone feared for their lives because they might get the virus, and most people used protective devices. People were curious about using protective devices to avoid transmission of the disease.

Preventive Practices of Healthcare Workers to Control Nosocomial Infections along Environmental (Water Sanitation)

Table 5 presents the Preventive Practices of Healthcare Workers to Control Nosocomial Infections and water sanitation.

As gleaned from the table, the highest indicator is item number 2, “I follow the guidelines in improving water management to reduce risks of waterborne infectious diseases,” with a weighted mean of 4.62, or “Highly Practiced.” It implied that the hospitals had afunctional water systems. As the Centers for Disease Control mentioned, waterborne pathogen growth and spread can be reduced by implementing corrective measures and identifying dangerous conditions through the use of a healthcare water management program. Water harbors germs that threaten the safety of patients and

spread antibiotic-resistant pathogens or healthcare-associated infections (HAIs). Water management programs in healthcare facilities are an essential way to help protect vulnerable patient populations, staff, and visitors.

Table 5

Preventive Practices of Healthcare Workers to Control Nosocomial Infections along Environmental (Water Sanitation)

n=100

Indicators	Weighted Mean	Descriptive Equivalent
1. I used in the ward water disinfection and sanitation treatment which can reduce viruses	4.53	HP
2. I follow the guidelines in improving water management to reduce risks of water-borne infectious diseases	4.62	HP
3. water management are used in the hospital that effectively lowers the rates of diseases spread by insects	4.49	P
4. The hospital had invested in safe drinking water with its water resource management system	4.59	HP
5. The rooms are equipped with continuous water supply	4.60	HP
AWM	**4.57**	**HP**

Legend:

Statistical Range	Descriptive Equivalent
4.50 – 5.00	Highly Practiced (HP)
3.50 – 4.49	Practiced (P)
2.50 – 3.49	Moderately Practiced (MP)
1.50 – 2.49	Slightly Practiced (SP)
1.00 – 1.49	Not Practiced (NP)

The lowest indicator is item 3, "Water management is used in the hospital that effectively lowers the rates of diseases spread by insects," with a weighted mean of 4.49, or "Practiced." It showed that the hospitals ensured that the water system was safe for patients and other personnel. The primary concern of the hospital administration is to

maintain the quality of water in the hospitals to prevent the occurrence of pathogenic infections that affect patients and personnel.

Overall, the Preventive Practices of Healthcare Workers to Control Nosocomial Infections and Water Sanitation got an average weighted mean of 4.57, or "Highly Practiced." This connotes that the hospital observes the proper techniques to ensure a safe water supply. As the Centers for Disease Control mentions, water is the foundation of life; because of that, wet environments pose a particular hazard of infection, promoting microbial growth and serving as a source for antibiotic-resistant pathogens and healthcare-associated infections.

Preventive Practices of Healthcare Workers to Control Nosocomial Infections along Environmental (Sterilization of Equipment)

Table 6 presents the preventive practices of healthcare workers to control nosocomial infections and sterilize equipment. As a result, all the indicators were rated "Highly Practiced," however, the highest indicators are item numbers 2 and 3, "sterilization of equipment is done before and after any surgical procedure which destroys all microorganisms on the surface of an instrument," and "used instruments are cleaned using water with detergents or enzymatic cleaners before sterilizing or autoclaving," with a weighted mean of 4.85 and 4.86, or "Highly Practiced." It reflects that the hospitals properly disinfect their equipment to kill microbes that cause diseases. According to the Centers for Disease Control, sterilization destroys all microorganisms on the surface of an article or in a fluid to prevent disease transmission associated with using that item. Most medical and surgical devices used in healthcare facilities are made of heat-stable materials and undergo heat, primarily steam sterilization.

The lowest indicator is item number 4, "I clean and wrap instruments, load the sterilizer, operate the sterilizer, and monitor the entire process," with a weighted mean of 4.75, or "Highly Practiced." It showed that the respondents knew very well that instruments used in patient care must be cleaned after use and have to be sterilized using a disinfectant or an autoclave for high sterilization. Every unit of the hospital has its way of making its equipment clean and suitable for patient use. Infections can happen when equipment is not properly cared for.

Table 6

Preventive Practices of Healthcare Workers to Control Nosocomial Infections along Environmental (Sterilization of Equipment)

n=100

Indicators	Weighted Mean	Descriptive Equivalent
1. Appropriate disinfection and sterilization of supplies and equipment is done which can help prevent healthcare-associated infections.	4.78	HP
2. sterilization of equipment is done before and after any surgical procedure which destroys all microorganisms on the surface of an instrument	4.86	HP
3. used instruments are cleaned using water with detergents or enzymatic cleaners before sterilizing or autoclaving	4.85	HP
4. I clean and wrap instruments, load the sterilizer, operate the sterilizer, and monitor of the entire process.	4.75	HP
5. surgical instruments are sterilized and wrapped in the central supply prior to use to protect patients from infections	4.79	HP
A W M	**4.81**	**HP**

Legend:

Statistical Range	Descriptive Equivalent
4.50 – 5.00	Highly Practiced (HP)
3.50 – 4.49	Practiced (P)
2.50 – 3.49	Moderately Practiced (MP)
1.50 – 2.49	Slightly Practiced (SP)
1.00 – 1.49	Not Practiced (NP)

Overall, the Preventive Practices of Healthcare Workers to Control Nosocomial Infections, along with sterilization of equipment, got an average weighted mean of 4.81, or “Highly Practiced.” This connotes that the respondents are utilizing properly sterilized equipment for the protection of patients. Crucial medical devices come into touch with

sterile bodily fluids or tissues. These objects should only be used sterilized because microbiological contamination can spread illness.

Preventive Practices of Healthcare Workers to Control Nosocomial Infections along Environmental (Waste Segregation)

The preventive practices used by healthcare workers to control nosocomial infections are displayed in Table 7 along with waste segregation.

Table 7

Preventive Practices of Healthcare Workers to Control Nosocomial Infections along Environmental (Waste Segregation)

n=100

Indicators	Weighted Mean	Descriptive Equivalent
1. I practice proper waste segregation and proper handling of healthcare wastes	4.85	HP
2. Waste are segregated in different trash bins depending on the waste materials	4.82	HP
3. Trash bins are provided with covers to prevent entry of flies	4.80	HP
4. Trash bins are collected regularly for proper disposal by the utility worker	4.78	HP
5. I optimize the placement of collection containers to ensure they are easily accessible	4.82	HP
AWM	**4.81**	**HP**

Legend:

Statistical Range	Descriptive Equivalent
4.50 – 5.00	Highly Practiced (HP)
3.50 – 4.49	Practiced (P)
2.50 – 3.49	Moderately Practiced (MP)
1.50 – 2.49	Slightly Practiced (SP)
1.00 – 1.49	Not Practiced (NP)

As gleaned from the table, all the indicators were rated “Highly Practiced,” however, the highest indicators are item number 1, “I practice proper waste segregation and proper handling of healthcare wastes,” with a weighted mean of 4.85, or “Highly Practiced.” Every healthcare worker is expected to know the proper segregation of waste since there are many types of waste in hospitals. Color-coded trash bins are provided in hospitals depending on the waste materials.

According to Karpinska et al. 2023, hazardous waste is a particular type of waste which, if not adequately treated and segregated, can pose a risk to human health and the environment. HCW (healthcare waste) contains potentially harmful microorganisms that can be spread among healthcare personnel, hospital patients, and the general public, causing severe illnesses. Healthcare personnel are the specialists especially exposed to this risk.

The lowest indicator is item number 4, “Trash bins are collected regularly for proper disposal by the utility worker,” with a weighted mean of 4.78 or “Highly Practiced.” It showed that hospital wastes are appropriately segregated and disposed of regularly because these are causes of infection since flies and other insects harbor them if not regularly disposed of. This area is also part of those monitored by monitoring teams in hospitals like the Department of Health and other agencies. Trash bins are segregated depending on the type of trash.

Overall, the Preventive Practices of Healthcare Workers to Control Nosocomial Infections along waste segregation got an average weighted mean of 4.81, or “Highly Practiced.” It connotes that the healthcare workers practiced proper waste segregation for different types of waste. Also, according to Karpinska et al. 2023, If medical waste is placed in a landfill for disposal without being processed and separated, chemicals, medications, or dangerous microbes may find their way into the soil and groundwater, contaminating it.

Preventive Practices of Healthcare Workers to Control Nosocomial Infections

Healthcare Workers' Preventive Measures to Reduce Nosocomial Infections are shown in Table 8.

All aspects of healthcare workers' preventive practices were rated as "Highly Practiced," as can be seen from the table. However, hand hygiene and the use of personal protective equipment received the highest rating on the individual element, with an average weighted mean of 4.79, or "Highly Practiced." Practicing hand hygiene is the most practical and cost-effective way to guard against the spread of nosocomial infections. Because healthcare personnel frequently come into contact with patients, their hands can quickly become infected with bacteria and viruses.

Table 8

Preventive Practices of Healthcare Workers to Control Nosocomial Infections
n=100

Aspect		WM	DE
Personal			
Hand Hygiene		4.76	HP
Personal Protective Equipment		4.81	HP
	AWM	4.79	HP
Environmental			
Hospital Ventilation		4.56	HP
Water Sanitation		4.57	HP
Sterilization of Equipment		4.81	HP
Waste Segregation		4.81	HP
	AWM	4.69	HP
	OWM	**4.74**	**HP**

Legend:

Statistical Range	Descriptive Equivalent
4.50 – 5.00	Highly Practiced (HP)
3.50 – 4.49	Practiced (P)
2.50 – 3.49	Moderately Practiced (MP)
1.50 – 2.49	Slightly Practiced (SP)
1.00 – 1.49	Not Practiced (NP)

The lowest aspect is environmental, which includes hospital ventilation, water sanitation, sterilization of equipment, and waste segregation, with an average weighted mean of 4.69, or “Highly Practiced.” This showed that the healthcare workers were aware of these practices and performed them in the clinical area to safeguard themselves and other hospital personnel. Trash bins are provided in every room and station to contain the microbes in the discharges and other fomites in the patients' rooms.

Overall, the Preventive Practices of Healthcare Workers to Control Nosocomial Infections got an average weighted mean of 4.74, or “Highly Practiced.” It connotes that healthcare workers highly utilize different practices to prevent nosocomial infections. Healthcare employees were trained to do the practices to safeguard their patients against disease transmission.

ANOVA Results on the Difference in the Preventive Practices of Healthcare Workers to Control Nosocomial Infections across Age

Table 9 presents the test results of differences in the preventive practices of healthcare workers to control nosocomial infections across ages.

All the computed F-values in the considered aspects reveal significance values higher than the set .05 level of significance. This leads to the acceptance of the theory stating there doesn't seem a substantial variation in healthcare workers' personal and environmental preventive practices to control nosocomial infections. This means that young and old healthcare workers provide the same level of training in both individual and ecological aspects. It only showed that all healthcare workers were practicing the different elements to limit, if not eliminate, the causes of nosocomial infections. Every healthcare worker's primary duty is to safeguard the patients while admitted to the hospital.

Table 9

ANOVA Results on the Difference in the Preventive Practices of Healthcare Workers to Control Nosocomial Infections across Age

Aspect	Source of Variation	Sum of Squares	df	Mean Squares	F-value	Sig	Remarks
Hand Hygiene	Between Groups	.081	3	.027	.233	.873	Not Significant
	Within Groups	11.125	96	.116			
	Total	11.206	99				
Personal Protective Equipment	Between Groups	.214	3	.071	.590	.623	Not Significant
	Within Groups	11.626	96	.121			
	Total	11.840	99				
Overall-Personal	Between Groups	.127	3	.042	.412	.745	Not Significant
	Within Groups	9.890	96	.103			
	Total	10.018	99				
Hospital Ventilation	Between Groups	1.119	3	.373	1.292	.282	Not Significant
	Within Groups	27.712	96	.289			

	Total	28.830	99				
Water Sanitation	Between Groups	1.658	3	.553	1.926	.131	Not Significant
	Within Groups	27.547	96	.287			
	Total	29.204	99				
Sterilization of Equipment	Between Groups	.210	3	.070	.378	.769	Not Significant
	Within Groups	17.747	96	.185			
	Total	17.956	99				
Waste Segregation	Between Groups	.275	3	.092	.560	.643	Not Significant
	Within Groups	15.745	96	.164			
	Total	16.020	99				
Overall-Environmental	Between Groups	.448	3	.149	.960	.415	Not Significant
	Within Groups	14.924	96	.155			
	Total	15.372	99				

ANOVA Results on the Difference in the Preventive Practices of Healthcare Workers to Control Nosocomial Infections across Gender Preference

Table 10 presents the difference in the preventive practices of healthcare workers to control nosocomial infections across gender preference.

Table 10

ANOVA Results on the Difference in the Preventive Practices of Healthcare Workers to Control Nosocomial Infections across Gender Preference

Aspect	Source of Variation	Sum of Squares	df	Mean Squares	F-value	Sig	Remarks
Hand Hygiene	Between Groups	1.471	2	.735	7.327	.001	Significant
	Within Groups	9.736	97	.100			
	Total	11.206	99				

Personal Protective Equipment	Between Groups	1.099	2	.549	4.961	.009	Significant
	Within Groups	10.742	97	.111			
	Total	11.840	99				
Overall-Personal	Between Groups	1.255	2	.627	6.945	.002	Significant
	Within Groups	8.763	97	.090			
	Total	10.018	99				
Hospital Ventilation	Between Groups	1.534	2	.767	2.726	.071	Not Significant
	Within Groups	27.296	97	.281			
	Total	28.830	99				
Water Sanitation	Between Groups	.399	2	.200	.672	.513	Not Significant
	Within Groups	28.805	97	.297			
	Total	29.204	99				
Sterilization of Equipment	Between Groups	.220	2	.110	.601	.550	Not Significant
	Within Groups	17.737	97	.183			
	Total	17.956	99				
Waste Segregation	Between Groups	.751	2	.375	2.385	.097	Not Significant
	Within Groups	15.269	97	.157			
	Total	16.020	99				
Overall-Environmental	Between Groups	.613	2	.306	2.013	.139	Not Significant
	Within Groups	14.759	97	.152			
	Total	15.372	99				

Based on the computed F-values, which generated significance values lower than the set .05 level of significance along personal aspects, both hand hygiene and personal protective equipment, the rejection of the null hypothesis is apparent. This implies that the gender preference of the health workers affects their personal preventive practices to

control nosocomial infections. More detailed statistical data on groups showing significant differences in personal preventive practices across gender preferences is shown in Table 11.

Meanwhile, the computed F-values along the environmental aspect provided significance values higher than the set .05 significance level. As a result, the null hypothesis will be accepted. Hence, gender preference does not affect the environmental preventive practices of healthcare workers to control nosocomial infections.

Scheffe Test Results on the Significant Difference in the Preventive Practices of Healthcare Workers to Control Nosocomial Infections across Gender Preference

` Table 11 illustrates how healthcare personnel' environmental preventive strategies varies significantly depending on gender preferences when it comes to controlling nosocomial infections.

Scheffe Test Results on the Significant Difference in the Preventive Practices of Healthcare Workers to Control Nosocomial Infections across Gender Preference

Table 11

Scheffe Test Results on the Significant Difference in the Preventive Practices of Healthcare Workers to Control Nosocomial Infections across Gender Preference

Aspect	Compared Groups	Mean Difference	Sig
Hand Hygiene	Man vs Woman	-.217	.007
Personal Protective Equipment	Man vs Woman	-.213	.013
Overall-Personal	Man vs Woman	-.215	.005

It is evident in the table that significant differences exist between men and women regarding personal preventive practices. The significant negative mean difference implies that women have a higher level of training than men in terms of personal preventive practices of health workers to control nosocomial infections. It means that women healthcare workers are more meticulous in rendering their nursing care than males. We know the background of females since they often do chores at home, so they are more used to working for their families.

ANOVA Results on the Difference in the Preventive Practices of Healthcare Workers to Control Nosocomial Infections across Civil Status

Table 12 exhibits the variations in nosocomial infection control measures used by healthcare professionals based on their civil status.

Table 12

ANOVA Results on the Difference in the Preventive Practices of Healthcare Workers to Control Nosocomial Infections across Civil Status

Aspect	Source of Variation	Sum of Squares	df	Mean Squares	F-value	Sig	Remarks
Hand Hygiene	Between Groups	.128	2	.064	.561	.573	Not Significant
	Within Groups	11.078	97	.114			
	Total	11.206	99				
Personal Protective Equipment	Between Groups	.204	2	.102	.851	.430	Not Significant
	Within Groups	11.636	97	.120			
	Total	11.840	99				
Overall-Personal	Between Groups	.144	2	.072	.709	.495	Not Significant
	Within Groups	9.873	97	.102			
	Total	10.018	99				
Hospital Ventilation	Between Groups	.041	2	.020	.069	.934	Not Significant
	Within Groups	28.790	97	.297			
	Total	28.830	99				
Water Sanitation	Between Groups	.131	2	.065	.218	.804	Not Significant
	Within Groups	29.074	97	.300			
	Total	29.204	99				
Sterilization of Equipment	Between Groups	.051	2	.025	.138	.871	Not Significant
	Within Groups	17.906	97	.185			
	Total	17.956	99				
Waste Segregation	Between Groups	.069	2	.035	.211	.810	Not Significant

	Within Groups	15.951	97	.164			
	Total	16.020	99				
Overall-Environmental	Between Groups	.012	2	.006	.039	.961	Not Significant
	Within Groups	15.359	97	.158			
	Total	15.372	99				

The computed F-values provided significance values which are higher than the set .05 level of significance. This suggests that the results are not significant. Therefore, the civil status of the health workers does not affect their preventive health practices to control nosocomial infections. It goes to show that their civil status has no direct effect and their practices in preventing nosocomial infections.

ANOVA Results on the Difference in the Preventive Practices of Healthcare Workers to Control Nosocomial Infections across Highest Educational Attainment

Table 13

ANOVA Results on the Difference in the Preventive Practices of Healthcare Workers to Control Nosocomial Infections across Highest Educational Attainment

Aspect	Source of Variation	Sum of Squares	Df	Mean Squares	F-value	Sig	Remarks
Hand Hygiene	Between Groups	.274	3	.091	.803	.495	Not Significant
	Within Groups	10.932	96	.114			
	Total	11.206	99				
Personal Protective Equipment	Between Groups	.233	3	.078	.641	.590	Not Significant
	Within Groups	11.608	96	.121			
	Total	11.840	99				
Overall-Personal	Between Groups	.226	3	.075	.738	.532	Not Significant
	Within Groups	9.792	96	.102			
	Total	10.018	99				
Hospital Ventilation	Between Groups	1.727	3	.576	2.039	.114	Not Significant
	Within Groups	27.103	96	.282			
	Total	28.830	99				

Water Sanitation	Between Groups	1.079	3	.360	1.227	.304	Not Significant
	Within Groups	28.126	96	.293			
	Total	29.204	99				
Sterilization of Equipment	Between Groups	.173	3	.058	.311	.817	Not Significant
	Within Groups	17.783	96	.185			
	Total	17.956	99				
Waste Segregation	Between Groups	.254	3	.085	.514	.673	Not Significant
	Within Groups	15.767	96	.164			
	Total	16.020	99				
Overall-Environmental	Between Groups	.437	3	.146	.935	.427	Not Significant
	Within Groups	14.935	96	.156			
	Total	15.372	99				

The differences in healthcare professionals' preventive measures to reduce nosocomial infections across the highest educational attainment levels are shown in Table 13.

The computed F-values along personal and environmental aspects indicated significance values higher than the set .05 significance level. Data suggest that the educational attainment of health workers does not affect their preventive practices to control nosocomial infections. It goes to show that the respondents had comparable preventive practices in the control of infections. It only implies that they were focused on their jobs and did not like that their patients would acquire the infection while confined in the hospital.

ANOVA Results on the Difference in the Preventive Practices of Healthcare Workers to Control Nosocomial Infections across Professional Area

The variations in the preventive methods used by healthcare professionals across professional areas to reduce nosocomial infections are shown in Table 14.

Table 14

ANOVA Results on the Difference in the Preventive Practices of Healthcare Workers to Control Nosocomial Infections across Professional Area

Aspect	Source of Variation	Sum of Squares	Df	Mean Squares	F-value	Sig	Remarks
Hand Hygiene	Between Groups	.665	7	.095	.829	.566	Not Significant
	Within Groups	10.541	92	.115			
	Total	11.206	99				
Personal Protective Equipment	Between Groups	.960	7	.137	1.159	.334	Not Significant
	Within Groups	10.880	92	.118			
	Total	11.840	99				
Overall-Personal	Between Groups	.772	7	.110	1.097	.372	Not Significant
	Within Groups	9.246	92	.100			
	Total	10.018	99				
Hospital Ventilation	Between Groups	1.441	7	.206	.691	.679	Not Significant
	Within Groups	27.390	92	.298			
	Total	28.830	99				
Water Sanitation	Between Groups	3.195	7	.456	1.615	.141	Not Significant
	Within Groups	26.009	92	.283			
	Total	29.204	99				
Sterilization of Equipment	Between Groups	1.530	7	.219	1.224	.298	Not Significant
	Within Groups	16.426	92	.179			
	Total	17.956	99				
Waste Segregation	Between Groups	.334	7	.048	.280	.960	Not Significant

	Within Groups	15.687	92	.171			
	Total	16.020	99				
Overall-Environmental	Between Groups	.729	7	.104	.654	.710	Not Significant
	Within Groups	14.643	92	.159			
	Total	15.372	99				

ANOVA Results on the Difference in the Preventive Practices of Healthcare Workers to Control Nosocomial Infections across Number of Years in Service

Table 15 displays how healthcare professionals' preventive measures for preventing nosocomial infections vary depending on how long they have worked there.

Table 15

ANOVA Results on the Difference in the Preventive Practices of Healthcare Workers to Control Nosocomial Infections across Number of Years in Service

Aspect	Source of Variation	Sum of Squares	df	Mean Squares	F-value	Sig	Remarks
Hand Hygiene	Between Groups	.238	3	.079	.695	.557	Not Significant
	Within Groups	10.968	96	.114			
	Total	11.206	99				
Personal Protective Equipment	Between Groups	.353	3	.118	.983	.404	Not Significant
	Within Groups	11.488	96	.120			
	Total	11.840	99				
Overall-Personal	Between Groups	.241	3	.080	.790	.502	Not Significant
	Within Groups	9.776	96	.102			
	Total	10.018	99				
Hospital Ventilation	Between Groups	.691	3	.230	.786	.505	Not Significant

	Within Groups	28.139	96	.293			
	Total	28.830	99				
Water Sanitation	Between Groups	.385	3	.128	.428	.734	Not Significant
	Within Groups	28.819	96	.300			
	Total	29.204	99				
Sterilization of Equipment	Between Groups	.726	3	.242	1.347	.264	Not Significant
	Within Groups	17.231	96	.179			
	Total	17.956	99				
Waste Segregation	Between Groups	.388	3	.129	.795	.500	Not Significant
	Within Groups	15.632	96	.163			
	Total	16.020	99				
Overall-Environmental	Between Groups	.399	3	.133	.853	.468	Not Significant
	Within Groups	14.973	96	.156			
	Total	15.372	99				

Computed F-values, which generated sig values that are higher than the set .05 level of significance, indicate insignificant results. This means that the number of years in service of the healthcare workers does not affect their preventive practices to control nosocomial infections. It revealed that the respondents perform their preventive practices regardless of their years in the service. The respondents do the daily routine in the area, so they are used to doing it in the best interest of their patients so as not to incur nosocomial infections.

ANOVA Results on the Difference in the Preventive Practices of Healthcare Workers to Control Nosocomial Infections across Area of Assignment

The differences in the preventive measures utilized by healthcare professionals to avoid nosocomial infections by assignment area are shown in Table 16.

Table 16

ANOVA Results on the Difference in the Preventive Practices of Healthcare Workers to Control Nosocomial Infections across Area of Assignment

Aspect	Source of Variation	Sum of Squares	df	Mean Squares	F-value	Sig	Remarks
Hand Hygiene	Between Groups	2.980	9	.331	3.623	.001	Significant
	Within Groups	8.226	90	.091			
	Total	11.206	99				
Personal Protective Equipment	Between Groups	3.026	9	.336	3.433	.001	Significant
	Within Groups	8.815	90	.098			
	Total	11.840	99				
Overall-Personal	Between Groups	2.834	9	.315	3.945	.001	Significant
	Within Groups	7.183	90	.080			
	Total	10.018	99				
Hospital Ventilation	Between Groups	2.071	9	.230	.774	.641	Not Significant
	Within Groups	26.759	90	.297			
	Total	28.830	99				
Water Sanitation	Between Groups	4.825	9	.536	1.979	.051	Not Significant
	Within Groups	24.380	90	.271			
	Total	29.204	99				
Sterilization of Equipment	Between Groups	2.204	9	.245	1.399	.200	Not Significant
	Within Groups	15.752	90	.175			
	Total	17.956	99				
Waste Segregation	Between Groups	1.883	9	.209	1.332	.232	Not Significant

	Within Groups	14.138	90	.157			
	Total	16.020	99				
Overall-Environmental	Between Groups	1.573	9	.175	1.140	.343	Not Significant
	Within Groups	13.798	90	.153			
	Total	15.372	99				

Table 16 displays the difference in the preventive practices of healthcare workers to control nosocomial infections across area of assignment. Results indicate that personal preventive practices to control nosocomial infections are significantly different across area of assignment. This implies that the area of assignment of the health workers significantly affects their personal preventive practices to control nosocomial infections. Table 17 on the next page shows a more comprehensive set of data on this significant difference.

On the other hand, no significant difference exists along environmental preventive practices to control nosocomial infections across area of assignment. This indicates that the area of assignment of health workers does not affect the environmental preventive practices to control nosocomial infections. It revealed that the respondents regardless of their area of assignment perform their activities to safeguard the patients from acquiring nosocomial infections while they are recovering in the hospital.

Scheffe Test Results on the Significant Difference in the Preventive Practices of Healthcare Workers to Control Nosocomial Infections across Area of Assignment

The Scheffe Test results for the significant differences in healthcare professionals' personal preventative actions to control nosocomial infections across areas of assignment are shown in Table 17.

Table 17

Scheffe Test Results on the Significant Difference in the Preventive Practices of Healthcare Workers to Control Nosocomial Infections across Area of Assignment

Aspect	Compared Groups	Mean Difference	Sig
Hand Hygiene	OPD/ER vs DR	1.000	.022
	Medical vs DR	1.121	.007
	OB vs DR	1.186	.009
	ICU vs DR	1.200	.010
	OR vs DR	1.175	.008
	Lab vs DR	1.089	.019

The table shows that the rest of the assignment areas are compared with the delivery room area. The significant positive mean differences indicate that the healthcare workers assigned in the DR have provided lower ratings on their level of personal preventive practices than those assigned in the OPD/ER, medical, OB, OR, ICU, and laboratory. This implies that those designated in the DR are rated lower than those in the other areas. However, those healthcare workers still perform their duties to prevent nosocomial infection among their patients. A low rating was given.

ANOVA Results on the Difference in the Preventive Practices of Healthcare Workers to Control Nosocomial Infections across Employment Status

Table 18 reveals the difference in the preventive practices of healthcare workers in controlling nosocomial infections across employment statuses.

The results are not significant, as evidenced in the computed F-values with corresponding significance values, which are higher than the set .05 level of significance. This means that the healthcare workers' employment status is the same regarding personal and environmental preventive practices to control nosocomial infections. It implies that regardless of their positions and employment standing, healthcare workers do what is necessary to maintain their duty to prevent the incidence of nosocomial infections. The ultimate goal of employees in a hospital is for better patient care outcomes and early recovery among patients.

Table 18

ANOVA Results on the Difference in the Preventive Practices of Healthcare Workers to Control Nosocomial Infections across Employment Status

Aspect	Source of Variation	Sum of Squares	df	Mean Squares	F-value	Sig	Remarks
Hand Hygiene	Between Groups	.115	3	.038	.332	.802	Not Significant
	Within Groups	11.091	96	.116			
	Total	11.206	99				
Personal Protective Equipment	Between Groups	.475	3	.158	1.337	.267	Not Significant
	Within Groups	11.366	96	.118			
	Total	11.840	99				
Overall-Personal	Between Groups	.184	3	.061	.599	.617	Not Significant
	Within Groups	9.833	96	.102			

	Total	10.018	99				
Hospital Ventilation	Between Groups	1.062	3	.354	1.224	.305	Not Significant
	Within Groups	27.768	96	.289			
	Total	28.830	99				
Water Sanitation	Between Groups	.147	3	.049	.162	.921	Not Significant
	Within Groups	29.057	96	.303			
	Total	29.204	99				
Sterilization of Equipment	Between Groups	.340	3	.113	.618	.605	Not Significant
	Within Groups	17.616	96	.184			
	Total	17.956	99				
Waste Segregation	Between Groups	.158	3	.053	.319	.812	Not Significant
	Within Groups	15.862	96	.165			
	Total	16.020	99				
Overall-Environmental	Between Groups	.241	3	.080	.511	.676	Not Significant
	Within Groups	15.130	96	.158			
	Total	15.372	99				

t-Test Results on the Difference in the Preventive Practices of Healthcare Workers to Control Nosocomial Infections across Type of Facility

The differences in healthcare personnel's preventive measures to manage nosocomial infections by type of facility are shown in Table 19.

Table 19

t-Test Results on the Difference in the Preventive Practices of Healthcare Workers to Control Nosocomial Infections across Type of Facility

Aspect	Type of Facility	n	Mean	Mean Difference	Standard Error Difference	Df	t-value	Sig	Remarks
Hand Hygiene	Private	425	4.80	.068	.068	98	.992	.323	Not Significant
	Government	858	4.73						
PPE	Private	425	4.88	.120	.069	98	1.723	.088	Not Significant
	Government	858	4.76						
Overall-Personal	Private	425	4.84	.094	.064	98	1.461	.147	Not Significant
	Government	858	4.75						
Hospital Ventilation	Private	425	4.70	.234	.107	98	2.185	.031	Not Significant
	Government	858	4.47						
Water Sanitation	Private	425	4.60	.050	.110	98	.456	.649	Not Significant
	Government	858	4.54						
Sterilization of Equipment	Private	425	4.85	.072	.086	98	.830	.408	Not Significant
	Government	858	4.78						
Waste Segregation	Private	425	4.83	.025	.082	98	.307	.760	Not Significant
	Government	858	4.80						

Overall-Environmental	Private	42	4.74	.095	.080	98	1.198	.234	Not Significant

The computed t-values provided significance values higher than the set .05 significance level. The results indicate no significant difference exists in the health workers' personal and environmental preventive practices when grouped according to the affiliated facility type. This further means that healthcare workers who work in private and government facilities share the same personal and environmental preventive practices to control nosocomial infections. It revealed whether a patient is admitted in public or private and enjoys the care given by the healthcare workers since the primary goal of their employment in a hospital is to help patients attain satisfaction with the services.

Relationship Between the Personal Preventive Practices of Healthcare Workers to Control Nosocomial Infections and their Profile Variables

Table 20 shows the relationship between the personal preventive practices of healthcare workers to control nosocomial infections and their profile variables.

Significant positive R-values are evident between personal preventive practices and gender. The positive R-values indicate a direct relationship. This means gender preference is significantly related to the personal preventive practices of healthcare workers.

Meanwhile, no significant relationship exists between the personnel preventive practices of healthcare workers and the other profile variables. This implies that healthcare workers should implement preventive measures to prevent their patients from getting infected while confined in the hospital.

Table 20

Relationship Between the Personal Preventive Practices of Healthcare Workers to Control Nosocomial Infections and their Profile Variables

Profile Variable	Hand Hygiene		Personal Protective Equipment		Overall Personal Practices	
	r-value	Sig	r-value	sig	r-value	Sig
Age	.025	.803	.106	.293	.071	.482
Gender Preference	.**211***	.035	.**238***	.017	.**241***	.016

Civil Status	.104	.305	.118	.243	.119	.239
Highest Educational Attainment	-.004	.965	.079	.434	.041	.688
Professional Area	-.062	.539	-.151	.135	-.115	.255
Number of Years in Service	-.108	.285	-.146	.146	-.137	.175
Area of Assignment	.068	.502	-.012	.907	.029	.771
Employment Status	-.013	.898	.116	.252	.056	.580
Type of Facility	-.100	.323	-.171	.088	-.146	.147

*Significant at .05 level

Relationship Between the Environmental Preventive Practices of Healthcare Workers to Control Nosocomial Infections and their Profile Variables

Table 21 presents the relationship between the environmental preventive practices of healthcare workers to control nosocomial infections and their profile variables.

As shown in the results, a significant negative R-value is evident between hospital ventilation and the type of facility.

Healthcare workers have become more affiliated with private facilities as they adhere to environmental preventive practices, specifically hospital ventilation. The study revealed that private institutions were more equipped with patient care facilities than government facilities. Private hospitals often upgrade their facilities to improve their services and charge much higher than government facilities. In private hospitals, more patients' rooms are well-ventilated and airconditioned and provided with adequate utility

workers to maintain sanitation. No other significant relationships have been detected between environmental preventive practices and other profile variables.

Table 21

Relationship Between the Environmental Preventive Practices of Healthcare Workers to Control Nosocomial Infections and their Profile Variables

	Hospital Ventilation		Water Sanitation		Sterilization of Equipment		Waste Segregation		Overall – Environmental	
Profile Variable	r-value	Sig	r-value	Sig	r-value	sig	r-value	sig		
Age	.041	.687	-.025	.807	.046	.652	.117	.247	.048	.638
Gender Preference	.087	.411	.084	.404	.102	.313	.130	.196	.161	.110
Civil Status	.003	.980	.007	.949	.032	.749	.065	.522	.028	.779
Highest Educational Attainment	.128	.205	.015	.884	.054	.597	.117	.247	.093	.357
Professional Area	-.060	.555	-.018	.858	-.050	.618	.114	.257	-.011	.913
Number of Years in Service	-.101	.319	-.093	.357	-.164	.103	-.144	.152	-.148	.143

Area of Assignment	-.016	.876	-.058	.565	-.009	.932	-.028	.780	-.035	.730
Employment Status	.182	.070	.034	.736	.128	.203	.037	.711	.118	.241
Type of Facility	-.216*	.031	-.046	.649	-.084	.408	-.031	.760	-.120	.234

*Significant at .05 level

Conclusions

Based on the findings of the study, the following are at this moment concluded:

The healthcare worker respondents were mainly young adults, women, singles, and bachelor's degree holders; most were nurses in the service for more than five years, primarily assigned to OPD/ER, regular employees, and mostly from government facilities. The preventive practices among healthcare workers are highest on personal hand hygiene and personal protective equipment and lowest on environmental. The gender preference of the health workers affects their preventive practices to control nosocomial infections, while environmental preventive practices do not affect the healthcare workers' ability to prevent nosocomial infections. Women healthcare workers are more meticulous in rendering their nursing care than men, and the area of assignment of the health workers significantly affects their preventive practices to control nosocomial infections. The health care workers perform preventive practices to keep their patients free from infection while they are confined in the hospital. Healthcare workers affiliated with private facilities adhere more to environmental preventive practices, specifically hospital ventilation. The proposed effective measures for preventing nosocomial infections are proposed for adaptation.

Recommendations

Based on the formulated conclusions, the following are at this moment offered:

Healthcare workers must continue to upgrade their qualifications for more updated knowledge and practices in preventing nosocomial infections.

The respondents must enhance their preventive practices to prevent nosocomial infections and environmental factors, including hospital ventilation and water quality.

Regardless of their gender preferences, healthcare workers must continue to practice the different aspects of preventing nosocomial infections.

Healthcare workers must improve their environmental practices so that their personal and environmental aspects are on par.

Since healthcare workers' hands are the most prevalent means of spreading healthcare-associated microorganisms from patient to patient and throughout the healthcare environment, hand cleanliness can help avoid many healthcare-associated infections. Here are the essential infection management techniques to lessen the spread of diseases. Staff Education is continuous. The key to effective infection control is having a well-trained staff member; without them, infection control measures would not be practical, routine audits would not be conducted, and transparent policies and procedures would not be established.

The health care workers render preventive measures to keep their patients free from infection while confined in the hospital. Healthcare workers affiliated with private facilities adhere more to environmental preventive practices, specifically hospital ventilation. The recommended practical steps—sanitation of medical equipment, waste segregation, supply of sufficient personal protective equipment, sanitizers, antiseptics, hospital ventilation, hygienic surroundings, and hand hygiene—to lower the chance of infections related to medical care. The practices would be more effective if there were provisions for an adequate water supply in the different areas for hand hygiene and the availability of personal preventive equipment among health professionals to prevent nosocomial infections.

Compliance with Ethical Standards

The researcher diligently ensured adherence to ethical precautions and procedures throughout the study. Every step of the research process was guided by careful consideration of moral principles, including:

Respect for Participant Autonomy:

Prioritizing informed consent ensures participants understand the study's objectives, potential risks, and benefits before obtaining their consent, ensuring their agreement is voluntary and free from pressure or coercion.

Confidentiality and Privacy Protection:

Safeguarding participant data and implementing strict measures to protect the confidentiality and privacy of participant's personal information and research data, ensuring that only authorized personnel can access them.

Beneficence and non-maleficence:

Minimizing harm, taking necessary precautions to mitigate potential risks or damage to participants during the research process, and ensuring their well-being is always prioritized.

Transparency and Disclosure:

Providing clear information and maintaining transparency in all aspects of the research, including the research objectives, methodology, and potential conflicts of interest, ensuring that participants are fully informed.

Fair Treatment and Equity:

Ensuring fairness that all participants are treated fairly and equitably, regardless of age, gender, race, ethnicity, or socioeconomic status, and that their contributions are valued equally.

Professional Integrity:

Upholding ethical standards, conducting the research with honesty, integrity, and objectivity, avoiding bias, fabrication, or falsification of data, and adhering to ethical guidelines and regulations.

Participant Advocacy:

Advocating for participants' rights and well-being throughout the research process, addressing any concerns or grievances they may have, and ensuring that their voices are heard and respected.

Conflict of Interest Management:

Managing conflicts during the research process involves disclosing any potential conflicts of interest and taking appropriate measures to manage them transparently and ethically.

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ORGANIZATIONAL KNOWLEDGE AND PERFORMANCE ANALYSIS OF CALL CENTERS IN DAVAO CITY

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ABSTRACT

This study aimed to identify the domain of knowledge management that best influences organizational performance in a call center industry setting in Davao City. The study employed a quantitative non-experimental research design to obtain the result. The study involved 197 respondents, from call centers at the supervisory level, who were chosen through a random sampling technique. The primary tool for data collection is an adapted questionnaire following a 5-point Likert-type scale. The data gathered were subjected to statistical analyses, which included weighted mean, Pearson correlation, and regression analysis. Results indicated that the level of Knowledge Management was very high, and the level of Organizational Performance was also very high. However, when these were tested for a significant relationship, the study found no association with a positive r-value of 0.093. Furthermore, it was shown that the Culture domain of knowledge management best influence organizational performance. This implies that the system of shared assumptions, values, and beliefs in the call center fields can change the view on the actual results or output of this firm as measured against its intended output, goals, or objectives.

Keywords: *knowledge management, organizational performance, call center industry, business, correlation, regression, Philippines*

INTRODUCTION

Globally, the business environment is very volatile with a dynamic nature that can be seen in challenges faced by the organization, especially in the call center industry. Poor organizational performance, one of the persistent issues that should be addressed immediately, is widespread in organizations. Such cases of sub-optimal efficiency, falling productivity and such bad service delivery raise an alarm indicating the presence of underlying bigger system issue that needs careful analysis (Abubakar et al., 2019).

Customer service centers are used by numerous companies to handle consumer questions regarding billing, opening new accounts, and faults with goods or services. In addition to being recognized as a useful tool for businesses to manage customer contacts, call centers have a bad image for being high-stress workplaces that lead to subpar organizational performance (Pfeffer, 2010). Nowadays, organizational performances have been declining over the years in a call center industry. Historically, companies do measure its performance through sales volume and financial performance; however, it is simply inadequate. Numerous businesses fail to recognize what other signs are as measurement strategies that are required to effectively redesign processes.

Other research also suggests that quite a few intangible resources have some impact on organizational performance, not much consideration was devoted to recognizing the decision-making procedures where resources become valued (Barney *et al*, 2001; Lynch, 2010). Thus, knowledge management can positively affect organizational performance; it must lend itself to improved organizational memory (Jennex, 2017). This is supported by other searches that using knowledge management effectively could increase organizational performance and competitiveness in the market and organizational awareness (Appolloni, Coppola & Piga , 2019). Literature appears to be voluminous on this, therefore much needs to be learned about the present state of knowledge surrounding organizational performance. In this realm, previous research has made significant contributions in the past pointing out different aspects that shape the efficacy of an organization. These studies have considered leadership styles, employee motivation factors and technological advancements among others. These contributions are important to note as they have formed the basis of future work, allowing us to build on prior insights as well as refine our knowledge of the connection among knowledge management and organizational performance.

The literature on knowledge management in the call center industry has made considerable progress in understanding how knowledge management practices are associated with company performance. But a prominent research gap remains in terms of identifying and focusing on certain features of their settings which affect the outcomes of knowledge management projects in different call centers. The focus of some investigations touched upon knowledge management at large organizational venues; however, many aspects of the call center environment have not yet been explored despite the emergence of the nature of the customer interactions, employee turnover, and the rapid development of technologies. It is imperative in filling this research gap to create specific and industry-based knowledge management interventions which can help improve the organizational performance and competitive advantage in the call center business sector which is a dynamic and competitive world. Since there is lack of information on the knowledge management and organizational performance of call center industry in Davao city, this explains why this research is taken, justified, needed and important. The objective of the study is to identify relevant recommendations that would help to establish new knowledge management practices applicable in the agencies to boost organizational performance under the current business environment parameters.

RESEARCH QUESTIONS

The purpose of the research is to identify which domain of knowledge management that best influences organizational performance in a call center industry setting in Davao City.

Thus, this study seeks to attain the following objectives:

1. To assess the level of knowledge management in terms of:
    1. leadership;
    2. strategy; and
    3. culture?
2. To ascertain the level of organizational performance in terms of:
    1. comparative performance;
    2. internal performance?
3. To determine the significance of the relationship between knowledge management and organizational performance?
4. To identify which domain of knowledge management best influences organizational performance among call center industry in Davao City?

METHODOLOGY

Research Locale

The research was particularly carried out in Davao, Philippines. After Metro Manila and Metro Cebu, this city has the third-highest population in the nation. In terms of total land area, the city also happens to be the biggest in the nation.

The survey was carried out in Davao City, which is host to roughly 15 international call center businesses. The city takes pride in being Mindanao's primary center for business, commerce, and manufacturing. Growing teams, accounts, and clients handled by a worldwide business process outsourcing (BPO) organization in Davao City indicate a rise in the BPO sector. Davao is starting to resemble Manila every day. This vast metropolis boasts abundant gastronomic, cultural, advertisement, and economic resources. International businesses, shopping centers, and other enterprises are already proliferating throughout the city and neighboring regions.

Sampling Method

The respondents in this research were the supervisory/management personnel in the call center companies in Davao City. A sample of 197 supervisory/management personnel in the call center industry was chosen to participate in this study. The respondents of the study were calculated by means of the Raosoft Sample Size Calculator with 5% margin of error.

The researcher utilized a basic random sampling technique. To guarantee that every member of the sample population has a similar likelihood of being chosen as a research participant, this sampling process was employed. It would prove nearly impossible to

test, look at, or gather data from every single component in a research study encompassing a large number of parts. Although it was feasible, the time, expense, and other human resources needs would be prohibitive. Sampling was therefore employed to enable research.

Data Gathering Procedure

After the panel members' consent, the researcher followed these stages and processes to collect information for the research: Firstly, the investigator requested consent from the university to perform the research. The top call center companies in Davao City received a formal letter of recommendation from the dean of the University requesting their cooperation.

Following approval, the researcher gave the participants a synopsis of the research and described the goal and research instrument. Following that, the researcher instructed the participants on how to complete the survey correctly. The researcher then painstakingly encoded every response in an Excel spreadsheet and sent it for statistical examination.

Following data collection, the findings were examined and interpreted considering the study's goals. Considering the study's outcomes, suggestions were developed, and conclusions were reached.

Research Instrument

Two standardized scales were used in this study. Two adapted and contextualized survey instruments were used in this study. A survey questionnaire on knowledge management was adapted from Mangotra and Mahajan (2014) which consisted of leadership, strategy, and culture with 21 items in total. On the other hand, organizational performance was taken from Makore and Eresia-Eke (2015) which comprises comparative performance and internal performance with 7 items in total. The scale has 5 options from “strongly disagree” to “strongly agree”.

A group of professionals verified the contextualization and fitting of the modified tools within the local environment. The independent variable is knowledge management with markers of leadership, strategy, and culture. Likewise, both instruments were verified for reliability and appropriateness through Cronbach Alpha test.

Statistical Treatments

Several statistical methods were applied to the information to provide deeper interpretation and assessment:

Mean. Mean was utilized to characterize the knowledge management and organizational performance in the call industry in Davao City.

Pearson Product Moment Correlation. This was utilized to assess the importance of the connection between organizational performance and knowledge management in the Davao City call center sector.

Regression Analysis. This statistical treatment was utilized to uncover which domain of knowledge management best influences organizational performance in a call center in Davao city.

Scope and Limitations

This study included participants with supervisory and line management personnel actively involved in call center operations in Davao City. The sample was selected to allow a concentrated focus on those individuals who enjoyed prominent positions in the call center companies, significant insights into the managerial aspects of the industry thus offered. Participants who were involved or manage—directly supervisory or managerial position in their organization, which indexes their impact on the functioning of the decision-making processes within the organization.

Taken on the contrary, exclusion criteria were developed to establish some form of refinement for the group by rejecting those participants who played no role or were not involved in the act supervisory and managerial processes in the call center setting. Since the goal was to measure the data of the specific stratum of the call center workforce – the managerial stratum – the paper excluded staff members without oversight responsibilities such as frontline agents or support staff. Simultaneously, originally people from call centers that are outside the city of Davao were excluded so that the geographical aspect and situation detail are maintained.

RESULTS

Table 1

Level of Knowledge Management in a Call Center Industry in Davao City

Indicators	SD	Mean	Descriptive Level
Leadership	0.19	4.77	Very High
Strategy	0.25	4.68	Very High
Culture	0.25	4.65	Very High
Overall	**0.17**	**4.70**	**Very High**

Table 2

Level of Organizational Performance in a Call Center Industry in Davao City

Indicators	SD	Mean	Descriptive Level
Comparative Performance	0.53	4.57	Very High
Internal Performance	0.35	4.58	Very High
Overall	**0.39**	**4.57**	**Very High**

Table 3

Significance of the Relationship between Knowledge Management and Organizational Performance in a Call Center Industry

	Organizational Performance		
Knowledge Management	**Comparative Performance**	**Internal Performance**	**Overall**
Leadership	-0.125 (0.081)	0.120 (0.093)	**-0.031** **(0.668)**
Strategy	-0.169* (0.018)	-0.051 (0.472)	**-0.139** **(0.051)**
Culture	0.397** (0.000)	0.173* (0.015)	**0.350**** **(0.000)**
Overall	**0.068** **(0.340)**	**0.104** **(0.147)**	**0.093** **(0.191)**

Table 4

Significance on the Influence of Knowledge Management on Organizational Performance of Call Center Industry in Davao City

Organizational Performance				
Knowledge Management	***B***	**B**	**t**	**Sig**
Leadership	-0.117	-0.056	-0.767	0.444
Strategy	-0.388	-0.249	-3.387	0.001
Culture	**0.692**	**0.443**	**6.382**	**0.000**
R	0.437			
R^2	0.191			
F	15.208			
P	0.000			

DISCUSSION

Table 1 showed the statistical descriptions result on evaluating the level of knowledge management in the Davao City call center business. The sector has a total mean of 4.70 alongside a descriptive score of very high, meaning that knowledge management situations are always observed. Overall, it shows that although some call center managers strongly agree or disagree with certain claims, most of them tend to realize that managing knowledge in their organization may be continuously observed, albeit with slight variations in each supervisor's response.

The leadership indicator had the largest mean of all the knowledge management measures, 4.77, and was considered very high. This suggests that managers frequently see their staff members work toward accomplishing the organization's common objectives.

Besides, the three indicators of knowledge management posited a very high level. The other knowledge management indicators, which are strategy, and culture, posited a *very high* level. It can be gleaned from the data that strategy gained the mean of 4.68, described as *very high*. This indicator specifies that the company is continually manifesting its role, purpose, and strategic direction. Whereas the culture obtained a mean of 4.65, taken as *very high*. This marker averts that the company is always encompassing various employees' backgrounds, shared values, and norms that emerged into a working environment.

The overall level of knowledge management was very high as perceived by the supervisory/management personnel in the call center industry. As to indicators, the level of knowledge management in terms of leadership was very high. This indicate that the leadership of supervisory/management personnel in the call center industry was observed at all times concerning; central knowledge in managing call center; recognizes the possibilities of its knowledge resources to generate revenue and cultivates methods to capitalize on them; a culture of transparency and confidence governs the call center; enhancing customer service is acknowledged as a key goal of knowledge management; adaptability and a desire for innovation motivate the approach to learning; the call center has developed innovative methods to connect knowledge to the monetary outcomes; and it has created a particular collection of indications for monitoring knowledge that includes financial as well as non-financial metrics.

The results confirm the study by Theriou et al. (2011), which uncovered that knowledge management can be made more effective by utilizing five enabling factors: people, technology, leadership, culture, and knowledge management strategy. These elements improve the organization's knowledge management effectiveness. They also underlined how information can be made more effective by leadership, which fosters an environment in which it can be applied in real-world situations to tackle organizational challenges. It also supports the research by Han et al. (2016), which found that leadership—which is crucial to teamwork—is a sensitive element in knowledge management.

According to Garcia-Morales et al. (2012), attending to the individual needs of employees can have a positive impact on the organization by encouraging personnel to put in more effort at work, improving the quality of products or services, and increasing customer satisfaction, which can lead to higher returns on expenditures and the chance to increase sales or services to boost earnings.

As to knowledge management in terms of strategy, the level was very high. This indicate that the strategy of supervisory/management personnel in the call center industry was observed at all times concerning; The team frequently holds meetings to stay up to date on the most recent technological advances improvements; staff members have access to the web for searching up data; guides and guidelines are frequently employed; significant occurrences, events and circumstances are dealt with; and all call center employees are continually looking for improved methods to satisfy consumers.

Theriou et al.'s (2011) study, which found that improving an organization's information-sharing strategy within a business can boost employee performance and corporate competitiveness, corroborated the study's findings. According to Fong and Kwok (2009), the goal of the approach is to improve information flow within the company through engagements and conversations.

As to knowledge management in terms of culture, the level was very high. This indicate that the culture of supervisory/management personnel in the call center industry was observed at all times concerning; Knowledge management facilitates acquiring fresh abilities inside their work; knowledge sharing facilitates studying afresh each day; an environment that supports advocates team members to contribute and talk about ways to avoid causing the same mistakes twice; an environment of trust facilitates improved decision-making and makes the task of making choices easier; prompt knowledge regarding innovative applications and technological advances enhances efficiency.

The study's findings in line with those of Gholami et al. (2013), who found that staff autonomy (skill development) and training, staff engagement in the management of knowledge tasks, collaboration, motivating staff members, efficient utilization of technology for communication and information, evaluation of performance that takes into account both soft and hard regulations and a knowledge-friendly workplace environment are among the most important aspects of knowledge management that may be developed. Additionally, Laal (2011) investigated knowledge management and discovered that information sharing that could influence an organization's principles and procedures requires trust among its members.

Table 2 displays the organizational performance status of Davao City's call center sector as determined by several markers: comparative and internal performance. The standard deviation was 0.39, which denoted the consistency of the respondents' answers. The calculations yielded a very high total mean rating of 4.57, indicating that organizational performance is consistently demonstrated.

The overall mean score was based on the mean scores of the two indicators of organizational performance. First was *the comparative performance* with a mean score of 4.57 described as *very high,* which depicted that the compelling motivation for organizational improvement was always manifested. Lastly, *internal performance* revealed a mean score of 4.58 described as *very high,* which meant that its growth is always manifested over a while.

The overall level of organizational performance was very high as perceived by the supervisory/management personnel in the call center industry. As to indicators, the level of organizational performance in terms of comparative performance was very high. This indicates that the leadership of supervisory/management personnel in the call center industry was always manifested concerning; in contrast to the business standard, they are more profitable; they have greater market share; and they are growing more rapidly.

The study's findings were in line with a 2003 study by Wright et al, which showed that management strategies for generating profits, operating costs, and sales were used

to track organizational performance as a measure of corporate success. To evaluate the company's success in comparison to its primary rivals, Kyrgidou and Spyropoulou (2013) gathered subjective assessments of sales, customer satisfaction, and financial performance. Additionally, Kunze et al. (2013) used senior managers' assessments of the company's financial status, expansion, efficiency, and personnel turnover as well as recruitment in comparison to the immediate industry competitors to evaluate the performance of the organization.

As to organizational performance, in terms of internal performance was very high. This indicate that the leadership of supervisory/management personnel in the call center industry was always manifested concerning; Their company is operating more efficiently than it was a year ago; it is operating more efficiently than it was a few years ago; it has accomplished the targets it set for the last year and the last five years.

Thomaz et al. (2017) investigated a method that tracks and assesses performance in connection with the definition of goals and desired outcomes, and organizational performance management, which includes techniques, structures, and indications. Developing and assessing a strategy, inspiring employees, and reporting the performance to stakeholders are all important aspects of improving the management of organizational performance.

Similar to this, an organization's performance serves as a foundation for evaluating how well its outcomes are moving in the direction of predefined goals (Wheelen and Hunger, 2012). Performance goals lead to an efficient execution of plans throughout the entire company, whereas a management of performance for the company ought to be put into practice (Zulkiffli, 2011).

Table 3 illustrates the investigation assessed the association between the two variables. The null hypothesis was accepted based on an overall r-value of 0.191 and a p-value greater than the 0.05 level of significance. Overall, the findings indicated that there is no discernible relationship between knowledge management and company performance. The conclusion suggests that there is no correlation between changes in an individual call center business's level of knowledge management and changes in organizational performance.

On the other hand, it can be observed that in a singular capacity, among all indicators of knowledge management, only culture had a significant relationship with organizational performance, as shown by its r-value of 0.350 and p-value <0.05. The strategy also had significant relationships when correlated with comparative performance, which obtained an r-value of 0.397 and p-value < 0.05.

The overall relationship between knowledge management and organizational performance in a call center industry was highly significant. This means that the more knowledge management being observed, the better the organizational performance in a call center industry.

The study's findings were in line with those of Rasula et al. (2012), who found a connection involving organizational performance and knowledge management strategy.

In a similar vein, Ling's (2013) research indicated a substantial relationship between the variables. The findings are coherent with the results of the study of Chen et al. (2015), who found that management is crucial to the search for goods and services that can boost an organization's productivity and maintain a larger competitive edge.

Table 4 are results of the regression study findings which demonstrate the strong correlation between organizational performance and culture as a knowledge management metric in Davao City call center businesses. The most accurate indicator was found to be culture, which had a considerable impact on organizational performance, according to the investigation. The statistical relevance of culture's impact on the efficiency of an organization is determined via an F-value of 15.208 and a p-value of 0.000, both of which are less than the 0.05 level of significance. Additionally, the findings showed that when knowledge management and organizational performance were regressed, the R2 value of 0.191 was produced. This suggests that 19.10% of the variability in organizational performance in the call center business may be explained by the knowledge management variations. By contrast, the remainder of 80.90% may be ascribed to other causes outside the purview of this investigation.

The overall significance of knowledge management on organizational performance was discovered to be significant. According to the findings, culture was the best indicator among leadership and strategy to predict the organizational performance of the call center industry.

Shahzad et al (2012) said that in order to raise employee performance generally, managers and other executives ought to foster a strong organizational culture. According to Fellows and Liu (2013), organizational culture fosters learning among its members. Adhocracy environments were also found to be strong positive determinants of performance in the company by Fekete and Bocskei (2011).

The research presented the salient role of organizational culture on performance outcomes. Culture directly affects the behavior of employees and indirectly impacts decision-making functions. A positive adaptive culture contributes positively to the performance measures and the study highlights this fact. Once advocated for strong organizational culture that encourages innovation, networking, as well as continuous development in the long run optimizes efficiency.

Strategy and culture’s powerful impact factors in the context of Davao City’s call centers contribute greatly to the outcomes achieved in the performance of operations. A strategic approach enables the processes to be fine-tuned, workflows to be tightened, and general performance to be smoothed. Moreover, the culture of organizations in call centers influences the way an employee acts and performs. It helps build a culture that supports teamwork, communication, and sense of accountability, and that also helps increase operational efficiency.

The cultural setting of Davao City significantly contributes to determining the organizational performance of call centers in the area. The cultural characteristics of organizations may help to create a co-operative and team-oriented environment amongst the employees which leads to effective communication and collaboration. Furthermore,

the high levels of industriousness and loyalty that are generally connected with being Filipino could positively influence call center operators in Davao City's commitment and productivity. But it is very important that organizations are culturally intelligent and that their management strategies are adapted to match with local values and practices, because, to not do so may cause problems regarding employee morale, engagement, and overall organizational performance. Achieving harmony between the international standards of best practices and the local cultural peculiarities is a precondition to fully unleash the potential of the workforce in Davao City's call centers.

Conclusions

This research presents that according to the supervisory/management personnel in the call center industry, the level of overall level knowledge management is very high. Likewise, a very high level of organizational performance in the call center industry was found. Moreover, there is no significant connection between knowledge management and organizational performance in the call center industry. Among the domains of knowledge management, culture was the best predictor of the supervisory/management personnel in the organizational performance.

These findings imply that knowledge management in terms of culture plays a necessary part in organizational performance. With this, the supervisory/management personnel could improve the performance of the organization and that can sustain greater competitive advantages.

Recommendations

The conclusion is that, while all in all, the KM levels in the Davao City Call Center Industry are praiseworthy, these recommendations try to fine-tune and improve aspects that were identified in the study. By tackling these areas, the industry can strengthen its position as an innovator in effective knowledge application, thereby ensuring continued organizational profitability and competitive advantage. The following recommendations address the call center industry players, management teams, and policymakers, whose interpretations significantly shape the knowledge management setting in their respective organizations.

Further investigations may also be focused on comparable research with multiple variables conducted by other researchers in order to validate the current study's findings while taking into account additional factors that influence organizational performance in the call center industry. Additionally, the area of study may be expanded in order to allow researchers to confirm the current study's findings.

Compliance with Ethical Standards

The research was conducted using the following ethical standards:

Informed Consent Process. Informed consent documents were provided for research participants to confirm their voluntary participation free from fear of harm or intimidation.

Voluntary Participation. Each participant was offered the option to participate freely and without facing any penalties or repercussions. Following the presentation of the study's objectives and advantages to the participants, the respondents' rights to participate in the research were duly acknowledged and respected. Respondents are free to choose not to answer any questions on the survey.

Privacy and Confidentiality. The study ensured that the participants' private and/or professional information remained confidential, with special attention paid to maintaining the maximum privacy of their data. Participants withdrawing were assured of confidentiality, and the data were excluded from the final analysis. The criteria for withdrawal plan to cater for anything unforeseen and ensure continuity of the integrity of the researchers' findings.

Benefits. Although there are no immediate rewards from this survey, participants can choose to provide their contact information to be entered into a lottery for five (5) cash vouchers worth Php 150.00, which will be given away to five (5) randomly selected responders. If the paper is turned into a non-technical study brief, call center organizations can use its results as a basis for enhancing their services, on the grounds of scholarly value, and use the summary of the research to implement policy adjustments at their own discretion.

Recruitment. The researcher's inclusion criteria, which included being 20 years of age or older, were used to determine which subjects should be recruited. Every employee in the business's human resources department helped the researcher find the appropriate respondents.

Risks. High-risk scenarios that participants might encounter, and which could give rise to medical, mental in nature or financial problems were not included in the study. There is very little evidence of discomfort or unease during the five to ten minutes it takes to complete the questionnaire.

Plagiarism. There were no claims employed in the research that led to plagiarism. Grammar uniformity and a low level of similarity can be achieved by using Grammarly, Turnitin, or any other plagiarism checker. This allows the researcher to freely communicate the topic in her own words.

Fabrication and Falsification. It is acknowledged that the research is grounded in a variety of studies, guaranteeing that the investigator refrains from drawing any conclusions from her own writing and instead presents the authors' ideas in her own authoritative voice. To match the results, the investigation is unlikely to inflate the data or overclaim works of others. The theoretical foundation and models that are employed must originate from authentic and trustworthy sources. Additionally, the study will not witness any falsification.

Conflict of Interest. Nevertheless, an insignificant conflict of interest was identified, thus it needs to be disclosed in this research. Although the researcher was a member of the leadership team at a BPO company, you can be sure that the study will

not affect any secondary interests and will only concentrate on the main goals, which include improving business decisions based on studies and participant wellbeing.

Deceit. The research gave those who participated the assurance that the information they received would not endanger them. No deceit or trickery will be required. Furthermore, the research exclusively uses in-person surveys; it makes no use of internet platforms to guarantee that any queries from participants are going to be addressed. Last but not least, the research questionnaire guarantees to be devoid of technical jargon, easily comprehensible for study participants, and providing a clear picture of potential benefits to participants following study execution.

Permission from Organization/Location. The research project began by requesting authorization to collect data from two sources: the administration of call center agencies and the University of Mindanao Professional Schools, as authorized by the dean.

Furthermore, the researcher made sure to secure formal consent from the company where the research will be conducted, or data collected. This consent is obtained through having the proprietors sign a letter granting authorization to do the study that has been submitted to them.

The owners' approved letters will act as official authorization to carry out a survey. To make sure that the call center industry was willing to have the survey conducted on their property, follow-ups were conducted. After ascertaining the willingness of supervisor or managerial staff to partake, the researcher coordinated the survey days' timetables with the call center industry's administration.

Authorship. Adhering to ethical standards in academic research, is acknowledgement of authorship which helps to credit individual contributions. The researcher serves as the first author of this research work; thus the researcher accounted the conception design, execution, and final analysis of findings. The supervisor’s key role is recognized as co-author as supervisor have guided and supported this research.

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ORGANIZATIONAL STRATEGIES, CHANGE MANAGEMENT PRACTICES, AND MOTIVATION ON NURSES' COMMITMENT

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ABSTRACT

This study investigated the extent of organizational strategies, change management practices, and level of motivation with which fit best in improving nurses' commitment. It utilized a descriptive correlational method among 344 nurses in Department of Health accredited hospitals in Sarangani Province and General Santos City. A self-made survey questionnaire was developed, validated, and administered to the respondents. Weighted mean was used to analyze the extent of implementation of organizational strategies, change management practices, and level of motivation and commitment. Spearman correlation was used to determine the relationships of the independent variables and the dependent variable; while multiple linear regression was utilized to determine the relationship of the independent variables to the dependent variable. Results showed that organizational strategies (r=0.355) (sig=0.000), change management practices with a correlation value of r = 0.164 (sig.=0.002), and motivation r=value of .214 (sig.=0.000) showed a significant relationship with commitment. All identified variables, namely, organizational strategies, change management practices, and motivation, significantly

influenced nurses' commitment. The work of being a nurse and the mission itself appeared to be where most of the nurses' commitment stems and comes from. This may explain why nurses still find nursing a fulfilling, rewarding, and satisfying profession. The result led to the recommendation to consider the proposed development program to be implemented which is relevant and timely in addressing the concern in increasing nurses' commitment.

Keywords: *Nurses Commitment, Organizational Strategies, Change Management Practices, Motivation*

INTRODUCTION

In the present-day environment, organizations are facing new challenges in creating a committed workforce (Andrew, 2017 & Bucăţa, 2018). Further, Bucăţa (2018) said that no organization can perform at peak levels unless each employee is committed to the organizational objectives.

Coronavirus Disease - The 2019 pandemic posed numerous adverse consequences like economic crises, global health shocks, changes in social behaviors, and challenges affecting the organization level from top to bottom. It also created disruption, uncertainty, complexity, and ambiguity in all organizations. With these challenges, Azizi et al. (2021) emphasized that people are the primary asset of any organization and that help achieve organizational goals. Accordingly, to manage human resources sustainably, studying commitment is significant.

According to Indradevi and Veronica (2018), commitment is generally characterized as the relative strength of an individual's identification with and involvement in a particular organization. Further, Jawaad et al. (2019) argued that Human Resource Management (HRM) has the capacity to influence the organizational conduct and behavior of the employees, thereby ensuring the achievement of the corporate goals and objectives. Human Resource Management positively influences firm performance which leads to commitment. Further, HRM practices are critical in the execution of effective training for

the employees, enhancing their inspiration through compelling reward strategies and reinforcing the enrollment and determination process.

Decades of commitment studies have taken place, and despite considerable advances, the field is currently working towards understanding workplace commitment. The field has been separated and divided in its fundamental understanding, as cited by Rosenberg et al. (2018). Despite this, there are a few studies focusing extensively on how nurses actually perform their jobs and concepts such as nurses' commitment and job performance. Further, most studies are focused on the relationship between organizational commitment and job performance (Lincoln et al., 2019).

To date, no study has investigated the influence of organizational strategies, change management practices, and motivation with which fits best in improving nurses' commitment. Further, professional development through an employee development program is critical to the nursing profession because it emphasizes the importance of human resource development, continuing education, and upholding competency.

On the other hand, the Philippines is facing challenges in the Filipino nursing workplace, including staffing concerns, operational mishaps and problems, generational gaps among nurses, high nurse turnover, and patient handling issues (Ramelb-olivar, 2016). These situations have greatly affected nurses' commitment. Without a sufficient number of committed nurses, the quality and safety of the healthcare system will be jeopardized. Being an important concept in human resource management, a wide span of literature exists on employee commitment research. Nonetheless, Fabiene and Kachchhap (2016) argued that little is known about the factors that enhance employee commitment among healthcare professionals in the Philippines.

At present, the governor of the Philippine Nurses Association - Region XII said that nurses' commitment to their profession was tested during this time of the pandemic. Moreover, there is a nursing shortage globally, and hospitals have sought many ways to increase nurses' commitment to organizations. However, the strategies have been only partially successful because they are based on a narrow conceptualization of commitment that fails to take into account nurses' views and participation in organizational development, as well as looming challenges on unequal pay and benefits, retirement and hospitalization benefits, and workplace safety.

With these realities, the researcher was interested in studying the commitment of nurses in terms of employee engagement, job satisfaction, and career development. The researcher was also interested in investigating organizational strategies' influence on goal setting and visioning, human resource management practices, operational excellence, and corporate culture. Further, the researcher considered the extent of change management practices in terms of leadership, communication, and development programs. Additionally, the researcher was interested in determining the level of motivation in terms of work environment, compensation, promotion, and rewards and resources.

Understanding what factors contributed to the commitment of nurses was essential to developing strategies and focus that could close the gap and ensure involvement and productivity for nurses. As such, this study explored the influence, if any, between organizational strategies, change management practices, and motivation on nurses' commitment, which led to crafting a development program for nurses in hospitals and other healthcare facilities.

Conceptual Framework

The conceptual framework of this study was presented in Figure 1. The framework showed the relationship between the independent and dependent variables. The independent variables include organizational strategies, change management practices, and motivation, while nurses' commitment as the dependent variable.

The extent of implementation of organizational strategies in the hospital was determined through goal setting and visioning, human resource management practices, operational excellence, and corporate culture. According to Gupta (2011), organizational strategy is a dynamic long-term plan that maps the route toward the realization of the organization's goals and vision, and factors such as the organization's corporate culture impact a company's ability to carry out objectives and plans. Likewise, human resources management practices as part of the systems and processes that are expected to be consistent with organizational strategy (Rao & Krishna, 2015). Furthermore, Babalola and Nwanzu (2020) cited Treacy and Wiersema's 1995 model that includes operational excellence as one factor influencing organizational strategies.

Change management practices were studied based on the following constraints: leadership, communication, and development programs. As emphasized by Roberts (2017), it was found that transformational leadership style, organizational change readiness, and effective communication are three major key factors that influence successful organizational change as well as employee development that goes a long way in training, sharpening the skills of an employee, and upgrading his/her existing knowledge and abilities.

The level of motivation was measured using the following factors namely, work

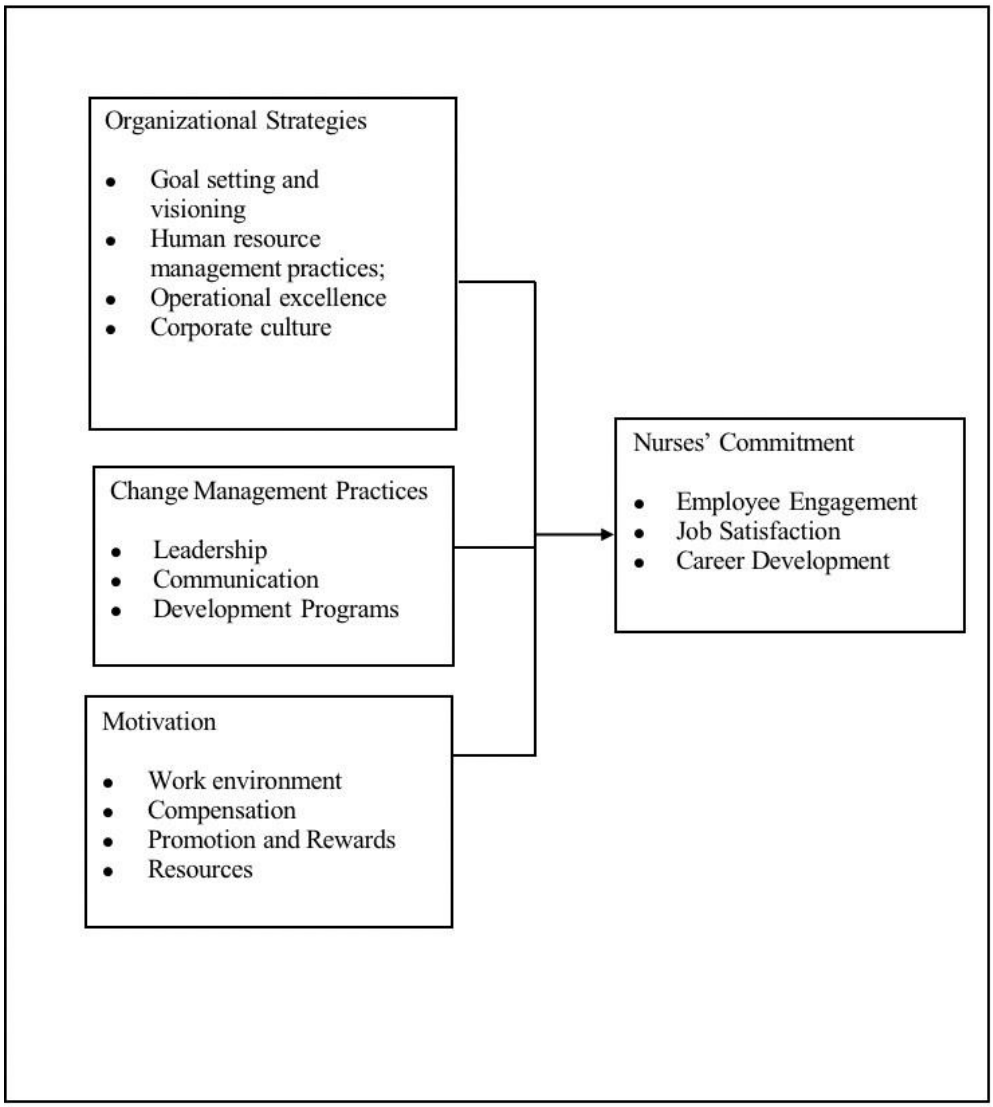


Figure 1. Conceptual Framework

environment, compensation, promotion and rewards, and resources. These variables were presumed to have an effect on the nurses' commitment. Work motivation, according to Joseph et al. (2017), consisted of both intrinsic and extrinsic motivation. It was influenced by many factors like organizational structure, monetary incentives like salaries, wages, bonuses, etc., benefits like housing, security, gratuities, medical aids, loans, and advancements, and psychological incentives like satisfaction, recognition, freedom to work, workgroup relations, etc. It also included dimensions like dependence, organizational orientation, workgroup relations, psychological incentives, material incentives, and job situations.

The dependent variable was the commitment of nurses. It included employee engagement, job satisfaction, and career development. Ahmad et al. (2020) cited that Brewer (1995) identified factors that affect nursing staff commitment, such as nurse identification, trust management, willingness to invest effort, participation in decision-making, voicing concern, feeling place of work was equitable, managerial strategies, and compliance. Further, they also cited that factors such as job satisfaction, work experience, and size of the organization influence commitment.

Related Literature

The following presents the related literature on organizational strategies, change management practices, motivation, and commitment of nurses.

Organizational Strategies

In today's scenario, most organizations struggle with implementing realistic strategies for growth. Leaders of organizations were faced with developing and implementing strategic plans that promote organizational effectiveness while addressing potential threats. Accordingly, the sum of the actions a company intends to take to achieve long-term goals defines organizational strategy. Collectively, these actions make up a company's strategic plan. Strategic plans require involvement from all levels of the department and it take at least a year to complete. In a step-by-step manner, the top management creates the larger organizational strategy, while middle and lower management adopt goals and plans to fulfill the overall strategy (Johnson, 2019).

According to Fenișer et al. (2017), the organizational strategy was described as a desirable image of the organization in the future and is designed to target what aims to make the organization. Strategic thinking is the key to achieving success in a competitive environment which is constantly changing. Also, Park (2015) said that an organizational strategy can impact employee commitment. Employee attitudes toward the organization's strategy are important factors in the success of an organizational strategy. Chubbs (2020) posited that organizational leaders should have the right strategy to sustain an organization. In many organizations today, the implementation of a new strategic plan became more responsive to a changing environment in meeting the needs of clients and workforce. Further, shared values are the foundation of an organization and organizational leaders are emphasizing this principle as they interact with stakeholders (Chubbs, 2020).

Goal setting and visioning

Organizational strategy according to Gupta (2011) was a dynamic long term plan that maps the route towards the realization of the organizations' goals and vision. Hence, in his study, one of the factors that should be considered is goal setting and visioning. Goals and objectives provide organizations with a blueprint that determines a course of action and aids them in preparing for future changes. A goal is a term characterized as a future state that an organization or individual strives to achieve**.** For each goal that an organization sets, it also sets objectives. An objective is a short-term target with measurable results. Without clearly-defined goals and objectives, organizations will have trouble coordinating activities and forecasting future events (Marler, 2012).

Further, Marler (2012) said that organizational goals serve four basic functions; they supply guidance and direction, facilitate planning, motivate and inspire employees, assist organizations, and evaluate and control performance. Organizational goals inform employees the direction of the organization and how it plans to get there. Employees who experience difficult decisions can refer to the organization's goals for guidance. Goals promote planning to determine how these will be met and achieved. To satisfy a need, employees set and prioritize goals in order; hence, goals can be motivational and these increase performance. Control and evaluation help organization to counter check and compare its actual performance to its goals and then make any necessary adjustments. Gartenstein (2019) further emphasized that useful goals should be challenging and

achievable. He further said that to be truly useful, goals should also be clear and – whenever possible – quantifiable.

Pyšný and Zrůst (2014) argued that management theoreticians agree that goal is one of the important factors of consciously managed companies. However, for the staff and management perceived importance of goals for various corporate levels is different. As far as the organization has a clear vision and goal, employees know the way. It serves as the engine of an organization, which not only motivates but also activates staff, managers, and stockholders.

Human resource management practices

Human resources management practices, as emphasized by Rao and Krishna (2015), are part of the systems and processes that are expected to be consistent with organizational strategy. It is presumed that human resource policies and practices influence employee behavior. If different employee behaviors are required to implement different strategies, then human resource policies and practices should systematically vary with organizational strategy. Further, Al Adresi and Darun (2017) cited that employees, with the help of organizational support, will be able to contribute to enhancing organizational commitment. Managers of organizations must personally lead the process of strategic implementation and performance of strategic human resource management practices. Also, the researchers emphasized that organizations should prioritize good human resource management practices as a planned approach in order to establish an open, flexible, and caring management style.

Operational excellence

Babalola and Nwanzu (2020) cited Treacy and Wiersema's 1995 model that includes operational excellence as one of the factors that influence organizational strategies. Similarly, according to Moran (2014), operational excellence is an opportunity-driven improvement program that identifies opportunities to safely and sustainably increase the value of business. It also reduces risk and lost opportunity in a value-prioritized sequence. Furthermore, operational excellence is a high-performance, cooperative, success-oriented work culture that elevates mindset, actions, and activities to create the superior

sustainable value safely. It requires thinking well beyond accelerating efficiency to improving effectiveness.

Corporate culture

Gupta (2011) argued that behaviors that are supposed to achieve strategic goals may be supported or impeded by culture. As he cited the study of Schwartz and Davis (1981), they pointed out, for better or worse, corporate culture has a leading impact on a company's ability to carry out objectives and plans, especially when a company is shifting its strategic direction.

Corporate culture can influence economic gains and outcomes, such as an organization's effectiveness and value creation (Fiordelisi et al., (2019). Zhao et al. (2018) expressed that corporate culture can benefit performance through three channels: enhanced coordination and control within the firm, improved goal alignment between the firm and its members, and increased employee effort. Corporate culture improves efficiency in an organization by enhancing coordination and control within the firm. It helps employees to interact and engage with each other. Additionally, it can develop employees' commitment to firms by enhancing their bond with the firm.

A promoted corporate culture collectively motivates employees to work toward corporate goals and thus increases firm value and financial performance. However, shareholders may not value corporate culture promotion, regarding it as an avoidable expense, which can lead to decreased firm value. Furthermore, a bad culture can be an obstacle to reaping benefits for firms (Zhao et al., 2018).

Change Management Practices

Change management is one of the biggest challenges in today's era. The prerequisite for the growth, development, and survival of any organization is to merge internal and external changes. Hence, along with other important business units of an organization, HR also needs to take the lead in keeping up with the required pace (Nasir, 2017).

Organizations must constantly innovate and embrace new ideas and ways of working to retain their competitiveness and survive (Belias & Koustelios, 2014). Change and its

management have attracted much attention over the years, as evidenced by the many books, research papers, and dissertations on the subject. For example, a search of academic literature in 2017 using the keyword ‘change’ in PsycINFO resulted in 48,879,883 items. Despite the abundance of material, many change initiatives fail (Pieterse et al., 2012).

As emphasized by Roberts (2017), it was found that transformational leadership style, organizational change readiness, and effective communication are three major key factors that influence successful organizational change. He said that transformational leaders create and provide a vision for change and maintain relationships with followers. More so, organizational readiness involves development programs like planning, developing strategies, and implementing change. Generally, readiness impacts employees’ commitment, beliefs, attitudes, and intentions toward change. In addition, communication provides clarity and direction and enforces commitment to change.

Leadership

Akinbode and Al Shuhumi (2018) said that to manage change successfully, an organization needs skillful and effective leaders. These leaders, on the other hand, need to understand the change management process. They also need to equip themselves with appropriate leadership styles and traits so that these leaders are able to initiate and guide the change process successfully.

According to Frisina (2014), leaders in an organization make things happen. Influential leaders go a step further by making a positive impact and difference in organizations and the lives of people who serve and are served by the organization. In a similar view, Frisina (2014) cited that influential leaders who act at a higher level, are more productive, and achieve greater results than other leaders with similar circumstances and resources. It is notable that influential leadership reveals how good people skills—trust and accountability, not processes—can strengthen the organization's pursuit of performance excellence as well as how leaders and staff will change their behavior when they understand how it affects the outcome of their work, the lives of those around them, and the organization's over-all performance.

Communication

More so, Heathfield (2019) said that no organization exists in which employees are completely happy with communication. Communication is one of the pressing issues in organizations. It is an aspect most frequently complained about by most employees during organizational change and daily operations. Effective communication requires four interworking components to create shared meaning, a favorite definition of communication. The individual sending the message should present the message clearly and radiate integrity and authenticity. The person receiving the message must decide to listen, ask questions for clarity, and trust the sender of the message. The delivery method chosen must suit the circumstances and the needs of both the sender and the receiver. The content of the message has to resonate and connect on some level with the already-held beliefs of the receiver (the employee). It should include the information that the employee wants to hear and must answer the employee's questions.

Schulz-Knappe et al. (2019) found that the higher employees perceived the quality of information about the change, the lower their resistance. He also posited that commitment describes how much employees identify with their employer and how willing they are to engage with the organization. In fact, several studies have shown that employees with higher job satisfaction and higher commitment have a greater willingness to participate in change processes (Schulz-Knappe et al., 2019).

Development programs

Individuals in an organization form its vital resource and must be valued, nurtured and retained. Juneja (2019) cited that employees are the most valuable assets and truly the backbone of an organization. Every employee, in his/her own way, contributes towards the success or failure of an organization. Without employees in an organization, even the most powerful machinery with the latest technology would not function. Employee development is a joint initiative of the employee and the employer to upgrade an individual's existing skills and knowledge. It is of utmost importance for employees to keep themselves abreast with the latest developments in the industry to survive the fierce competition.

Moreover, employee development goes a long way in training, sharpening an employee's skills, and upgrading his/her existing knowledge and abilities. In layman's language, employee development helps develop and nurture employees so that they become reliable resources and eventually benefit the organization. Employees also develop a sense of attachment to the organization as a result of employee development activities (Juneja, 2019).

Towns (2019) in his study argued that development programs increase employee satisfaction and are significant in an employee's decision to stay with the company. Organizations have set up their employee development programs in a variety of ways. He contended that a truly effective development program should include learning, career planning, goal setting, and evaluation to implement change among employees and the organization successfully. These areas will help the program be beneficial to the employees who utilize it and to the organization that provides it.

Motivation

Perreira (2016) emphasized that work motivation has been associated with work productivity. In health care, low motivation levels are directly linked to low productivity, poor performance, decreased patient safety, and poor quality care. Further, hospital nurses are at the spearhead of services, directly in contact with patients twenty-four hours a day and nurses' performance is a key factor to be considered by all hospitals (Raden et al., 2019).

In addition, one of the functions of motivation is the degree of commitment and performance. Accordingly, motivating employees to execute tasks assigned to them is one of the major problems confronting management and managers. Motivation is one of the many factors affecting an employee's performance. Though motivation is a factor that influences a worker's performance, it is in short supply and needs to be constantly replenished (Teryima et al., 2016).

Work motivation can be characterized as the process by which behavior is energized, directed, and sustained in any organizational setting. It is a set of energetic forces that spring up both within and beyond an individual's being to initiate work-related behavior and influence its form, direction, intensity, and duration. Work motivation consists of both

intrinsic and extrinsic motivation. It is influenced by many factors like organizational structure, monetary incentives like salaries, wages, bonuses, etc., benefits like housing, security, gratuities, medical aids, loans, and advancements, and psychological incentives like satisfaction, recognition, freedom to work, workgroup relations, etc. It also includes dimensions like dependence, organizational orientation, workgroup relations, psychological incentives, material incentives, and job situations (Joseph et al., 2017).

Potgieter and Tait (2013) cited the complexity of the relationship between work motivation, performance, and productivity in which hygiene factors, such as job satisfaction, rewards, leadership styles, and communication, contribute to work performance and productivity of employees. Employee skills, training, availability of resources, management practices, and economic conditions also influence employee performance.

The health sector is defined as labor-intensive, and the strength of an organization that operates within its context is inextricably linked to the level of employee performance (Kitsios & Kamariotou, 2021). Therefore, it is essential to take maximum advantage of the full potential of human resources by providing the appropriate incentives, which will naturally cause the adoption of the desired attitude and behavior.

According to Kitsios and Kamariotou (2021), factors that contribute to the increase in staff satisfaction are salary and wages, leadership, rewards, meritocracy, objective judgment on promotions and salary increases, rational division of duties and work within the unit, fair distribution of shifts and impartial attitude of the administration. Moreover, employees are highly satisfied with their jobs when there are opportunities for development and growth within the health unit.

Schopman et al. (2015) cited that the existence of comfortable and functional workplaces and staff rest, the existence of appropriate equipment and consumables, and the relationships among employees and those between employees with management affect the commitment of nursing and medical staff.

Work environment

AbuAlRub et al.'s (2016) study results necessitate improving workplace conditions among nurses in underserved areas. The findings also emphasized the positive impact of a supportive work environment on enhancing nurses' intention to stay or retain at work.

One of the many challenges for a business, as cited by Raziq and Maulabakhsh (2015), is to satisfy its employees to cope with the ever-changing and evolving environment, achieve success, and remain in competition. More so, in order to increase the efficiency, effectiveness, productivity, and job commitment of employees, the management should focus on strategies that create an effective workplace environment. They also argued that an organization needs to pay attention to creating a work environment that enhances the ability of employees to become more productive in order to increase profits for the organization.

Chandrasekar (2011) also affirmed that unhealthy and unsafe work environments in terms of poor ventilation, immoderate noise, inadequate lighting, etc., affect employees' productivity and health.

Compensation

According to Ali and Ahmad (2017), pay is considered a monetary and extrinsic reward, including salary, bonus, cost of living allowance, etc. Pay should be equal to the work an individual does. If pay is not perceived to be equal to the workload, it leads to dissatisfaction, and the employee's motivation level is affected. Pay based on performance will produce more promising results in terms of employee productivity and job satisfaction.

These findings in the study of Chen et al. (2015) state that Chinese nurses' work attitudes are influenced by their satisfaction with pay and their satisfaction with the psychological rewards they receive from their head nurse. When nurses feel satisfied with both types of rewards, they have a lower turnover intention and higher levels of job satisfaction and affective organizational commitment. Hospital managers should prioritize financial and psychological rewards to develop an efficient reward system to attract, motivate, and retain qualified nurses.

Strategically targeted compensation practices can be used to advance specific important organizational goals. Embracing the adage “you get what you pay for,” nurse leaders and their organizations have a strategic opportunity to strengthen and transform their nursing staff and leadership teams through creative design and application of pay practices. Healthcare employers can leverage their compensation program through staff communication to build loyalty, trust, and engagement within their nursing workforce. Bedside nurses frequently do not understand the intricacies of how they are paid and incentivized through their employer’s pay practices. Seasoned nurse leaders know that nurse satisfaction with pay is frequently one of the lowest-rated and most intractable variables on employee engagement surveys. The influence of pay can be a neglected variable in reports focused on nurse turnover and nurse staffing. Through collaboration and shared decision-making, senior nurse leaders can ensure that their compensation strategy supports the values and development of their professional nursing staff and ensures financial viability for their organization. Nursing compensation practices have remained stable and consistent across hospital employers within geographical markets and throughout the United States (Bradley, 2021).

Promotion and rewards

Ali and Ahmad (2017) said that rewards and recognition have a prominent impact on job satisfaction of employees. The human resource department should guarantee that while setting the strategies for the rewards and recognition they should keep equality in mind for the best outcomes in terms of high productivity and performance. Proper market analysis should also be done as to how other organizations are working on the satisfaction of their employees.

Furthermore, promotion in the study of Ali and Ahmad (2017) means climbing the corporate ladder, or in other words, when an individual moves from one designation to a higher one, it is considered as promotion. Promoting employees to improve job satisfaction can be challenging for HR managers unless there is justification that promotions will resolve job satisfaction issues. Pay and promotion are part of extrinsic rewards, which are monetary.

According to Shanafelt and Noseworthy's (2017) study, people can be motivated by rewards. Many healthcare organizations have linked physicians' financial compensation

to productivity to harness this principle. In some settings, physicians' income is entirely based on productivity, and in others, it is structured as a base salary with a productivity bonus.

Resources

Aside from the acknowledgment of their work, employees are highly satisfied with their job when there are opportunities for development and growth within the health unit (Schopman et al., 2015). To determine the importance of motivating health workers in Sweden, Holmberg et al. (2015) investigated the factors that can motivate nurses. They argued that nurses cannot be motivated only by material or financial rewards but also by factors contributing to their personal and professional development. They also argued that their motivating factor is the job satisfaction they receive both from the execution of their responsibilities and from the conditions prevailing in their work environment.

Commitment

Organizations value commitment among their employees to reduce withdrawal behavior, such as lateness, absenteeism, and turnover. Therefore, these values appear to have potentially serious consequences on overall organizational performance. Commitment reflects the feelings of dependency, identity, loyalty, and desire to continuously stay within an organization to achieve a goal (Womack et al., 2018).

Commitment is characterized generally as the relative strength of an individual’s identification with and involvement in a particular organization. It can be characterized by at least three related dimensions: a strong belief in and acceptance of the organization’s goals and values, a willingness to exert considerable effort on behalf of the organization, and a strong desire to maintain membership in the organization (Indradevi & Veronica, 2018).

Employee commitment is one of the important factors that facilitates successful strategy implementation. To implement strategies successfully, firms need to create an organizational climate that supports the commitment of employees to strategy implementation. Employee commitment is necessary to align strategy implementation and strategy decisions. Employee involvement and commitment are key to implementing

successful strategic change in organizations. Commitment increases employee motivation, shortens the lead time required for strategy implementation, and allows fast responses to changes in the business environment. Empirically, many researchers have examined the impact of strategy implementation and performance (Kumar, 2015; Aremu & Oyinloye, 2014; Ibrahim et al., 2012).

According to Gul (2015), the psychological immersion of an employee with his institute through a sense of belonging, ownership of organizational goals, and being ready to accept challenges defines commitment. It will become difficult for an organization to achieve strategic goals without workplace commitment. Organizational commitment means the engagement of an employee to perform his work with eagerness and excitement. The commitment level of employees is directly related to the performance of an organization. Committed employees will be able to accomplish their jobs more than management expectations. High-level commitment from workers is indispensable for accelerating output and obtaining sustainable competitive advantages (Nadia & Fathurahman, 2017).

High commitment is viewed as central to positive employee relations. It also has important consequences in health service organizations, as it has a major role to play in delivering high-quality health care. Patient care and satisfaction are directly correlated with the contribution of direct care (McCabe & Garavan, 2011). Common to all the conceptualizations of commitment found in the literature is a link with turnover, although the nature of that link differs. Employees who are strongly committed are those who are least likely to leave the organization (Aluwihare-Samaranayake et al., 2018). Furthermore, Aluwihare-Samaranayake et al. (2018) argued that healthcare organizations are social institutions that depend on nurses to provide direct service to patients. Retention of nurses by the healthcare organization that employs them is crucial to future delivery of healthcare. One potential solution to turnover is a better understanding of the major factors associated with or modifying nurses' commitment to their work. Research on organizational commitment is important to healthcare institutions striving for a competitive advantage. Nurses work long hours and experience frequent shift changes and other unique stressors, such as threats to personal safety. Nurses require autonomous, independent decision-making in direct patient care, all for a modest amount of pay. Many nurses, however, persist in hospitals despite such hardships. Why nurses continue or leave may be explained in part by the commitment they feel towards

their immediate work environment including their patients, families, profession, community, or country. The phenomenon of commitment is a cornerstone of human social life. Commitments make individuals' behavior predictable in the face of fluctuations in their desires and interests, thereby facilitating the planning and coordination of joint actions involving multiple agents (Michael & Pacherie, 2015).

As emphasized by Nadia et al. (2017), there is a clear relationship between the work environment and the well-being of the individual both physically and psychologically so that a comfortable working environment can increase the sense of employee well-being. Employee well-being is one of the crucial issues for the organization, which deals with the mental health that happens in the workplace. Accordingly, medical workers are professionals who intensively experience job stress. Medical workers who work as doctors, nurses, therapists, and others have to deal with complaints of patients, their families, and illnesses, so they are very susceptible to depression. A stressful work environment can lead to several health symptoms that include physical health (such as cardiovascular and gastrointestinal problems), mental health (such as blood pressure, anxiety, and depression), and low job satisfaction. To provide maximum service to the patient, one important factor is the physical condition of an adequate working environment to help the work become easier, increase productivity, and increase employee well-being.

Wainwright (2018) said that committed employees bring added value to the organization through their determination, proactive support, relatively high productivity and awareness of quality. They display positive behavior within organizations, are more likely to positively refer the company to contacts, and are furthermore likely to adopt the organization's vision and goals (both professionally and personally). Also, they are much less likely to leave their current position in the workplace.

Ahmad et al. (2020) cited Brewer's (1995) identified factors affecting nursing staff commitment, such as nurse identification, trust management, showing a willingness to invest effort, participation in decision-making, voicing concern, feeling their place of work is equitable, managerial strategies, and compliance. Further, they also cited that factors such as job satisfaction, work experience, and size of the organization influence commitment.

Estigoy and Sulasula (2020) argued that in today's fast-paced competitive world, every organization constantly faces new challenges regarding sustained productivity and creating a committed workforce. Commitment in different forms displays that there are employees who choose to stay their whole life within the organization; there is a certain abstract string that binds individuals to the organization; employees who are reactive if needed; and the factors found common to the employees that lead to commitment. Being feeling involved and engaged is a different thing as a whole to the organization. Committed employees are the organization's greatest assets, and they are believed to play a vibrant role in overall business efficiency and profitability.

Additionally, Estigoy and Sulasula (2020) said that commitment is a feeling of loyalty and oneness that an employee feels towards the organization. This is normally based on personal experiences with regard to the organization's policies and procedures and employees interaction serve as agent of the organization. The feelings and beliefs of employee for being part of the organization somewhat boost their productivity. Organizational Commitment is a core predictor of employee's attitude to the organization and is a strong indicator of turnover behavior, withdrawal tendency, and organizational citizenship behavior. The bond of the employee interprets what are the values and attitudes of employee. Committed employees are increasingly becoming a valued asset in organizations. Employee commitment is viewed as a commitment to the organization as well as employees' commitment to their occupations.

Employee engagement

Indradevi and Veronica (2018) emphasized that employee engagement is employees' emotional commitment to the company and its goals. So when employees are engaged and committed to the organization and its goal, they care about the hospital, their team, and their patients. There is a significant link between employee engagement and patient care and satisfaction improvements. For instance, higher nurse engagement scores lead to lower patient mortality and complications, according to a recent Gallup study. Just like employees in any other industry, healthcare providers will also do better work and provide better care if they are happy and committed in their jobs. Service Organizations such as hospitals are a social system that requires human resources for its effective and efficient operations. It is essential for hospitals to focus on their employees and keep them satisfied and committed to enhancing hospital efficiency in healthcare service delivery.

With organizational commitment being seen as the main area of focus in human resource management, there is also a need to look into the employee's commitment to ensure employees' well-being, which will further drive organizational performance.

An employee's competency is a capability and characteristic owned by the employee in the form of knowledge, skills, and attitudes, and is required for completing the duties professionally, effectively, and efficiently (Aini, 2018). According to Sagherian et al. (2017), hospital nurses are expected to maintain optimal work performance, yet fatigue can threaten safe practice and result in unfavorable patient outcomes.

Job satisfaction

In order to attain a satisfactory level of organizational management in health institutions, one has to take into account employees' job satisfaction and organizational commitment. The fundamental paradigm of the relationship between job satisfaction and organizational commitment is that if an employee is satisfied with the job, he/she will develop a stronger commitment to the organization (Veličković et al., 2014).

Job satisfaction can be defined as how contented an employee is with his/her job. If the nature of work and the rewards given are both monetary and non-monetary and according to the expectations of an employee, he tends to be satisfied with his job. If not, it will result in a dissatisfied employee that might lead to an increase in turnover. Employee's productivity, and creativity increase when they are happy with their job because they become more attentive and display more dedication toward their specific work. Therefore, employee satisfaction plays an important role in organizational growth (Ali & Ahmad, 2017).

Moreover, job satisfaction, organizational commitment, level of education, experience, nurses' morale, work-related stress and burnout, support from co-workers, supportive supervision and feedback, training on clinical tools, recognition, job expectations, work environment, motivation, incentives, knowledge, skills, promotion, remuneration, and competency level are among the numerous factors affecting nurses' performance level. The recent data on nursing posts in the country informs that nurses make up the largest number of health workers in the public health sector. It only means that the country relies

hardly on nurses for service delivery, and their performance is critical for the successful provision of health care (Tesfaye, et al., 2015).

Eliyana et al. (2019) cited that job satisfaction is characterized by how employees are satisfied with their work. Job satisfaction is a common behavior to work performance while awards and achievements are given. Empirically, job satisfaction has a relationship with work performance. It is said that an organization with more satisfied employees tends to be more effective and productive.

Huning et al. (2020) affirmed that highly satisfied employees often remain with the organization. Their study showed that if an individual is experiencing positive relationships at work, they tend to have high job satisfaction. The study of Bennett and Hylton (2021) emphasized that a nurse tends to be satisfied with one's job and stays at one's organization when certain components of job satisfaction are satisfied. These components include the following: autonomy, the work itself, policies of the organization, salary, supervision, status, and the opportunity for promotion. It is further posited that a main variable that tends to contribute to the high retention of nurses is organizational commitment.

Career development

Tsai (2014) explored the relationship between learning organizations, internal marketing, and organizational commitment in hospitals. Based on the findings, the implementation of a learning organization and internal marketing is a strategy that enhances the employees' commitment to healthcare organizations. The learning organization is defined as the continuous upgrading of employees' competencies to improve patients' care and the quality of the service. Thus, in order to be competent, healthcare should be able to adapt the technological and environmental changes, continual education, and training. In fact, learning organization helps to improve employees' creativity and efficiency in the workplace. Internal marketing involves strategies for human resources management to encourage and motivate the employees for training and updates. Therefore, healthcare employees tend to remain committed to the organization when the management practices, promotes, and enhances personal development and improvement of employees' capabilities and performance.

Pathiranage (2020) posited that organizations should support their employees by creating a career development culture and providing career support by the management, the outcome of which is increased career satisfaction and commitment. Delbari et al. (2020) found that among 331 participants in two Iranian universities, staff self-regulation positively and significantly affected individual, organizational, and environmental productivity factors. Based on the results, educational institutions, especially universities, should allow their staff to exploit their full potential by reinforcing their self-regulation and increasing their commitment.

Related Studies

The following presents the related studies on organizational strategies, change management practices, motivation level, and commitment of nurses.

El Muksoud et al. (2021) conducted a study on “Leadership behaviors, organizational commitment and innovative work behaviors among nurses”. Among 100 staff nurses working at Belbeis General Hospital, results showed that the highest percentage of staff nurses had a positive perception of the leadership behavior where staff nurses choose to work with a leader using leadership behaviors that include pure vision, commitment to excellence, loyal to their staff nurses, willingness to inspire, communicate, and lead others to greater accomplishment. They also foster innovation and stress the value of appreciating and valuing staff nurses. Leadership behaviors and workplace environment have often been seen as a vital element and features of management that influence the level of commitment of employees within the organization and have the possibility to boost organization effectiveness, innovative work behaviors among staff nurses, job satisfaction, as well as a sense of confidence about problem-solving in order to achieve the organizational objectives.

Rajput et al. (2021) conducted a study entitled, “An inclusive systematic investigation of human resource management practice in harnessing human capital”. This study showed that when it comes to utilizing or harnessing human capital for any organization, it becomes very important to know the management science behind Human Resource Management. Intellectual capital, technology, globalization, profitability via expansion, and change are all major business problems that companies are presently experiencing. These problems require companies to collaborate to create new skills, and human

resource management is in charge. It assists companies in addressing competitive difficulties by acting as a leader. Human Resource professionals have lost their stereotype of monitoring policies and enforcing rules. They are now held accountable for their employees' engagement and dedication to the company and motivate people to participate and take ownership. It is no longer a relic of the past. It has evolved from a little reactive image to a much larger canvas. The new management of human resources is triggered by bringing the organization's management together with the workers, resulting in a merger of the person's and the organization's reservoirs of knowledge, culminating in the joint victory of both. Global competitiveness may be accomplished not only by using updated technology and facilities but also by encouraging workers to adhere to international standards in an efficient and effective manner. Human resources specialists in every firm on the global stage have the goal to influence the business world; it is currently in a paradigm change, and its role as a support function, relied on to assist others and to recruit and dismiss from businesses, is quickly fading. Human resources are taking a proactive role in addressing globalization's issues. It brings about change, enhances people's abilities to learn and cooperate, and handles variety, ambiguity, and complexity. The study and comparison of the perceptions of corporate workers, management faculty, and management students in an effort to understand the role of HRM in developing national talent for global success.

Adkins-Provost (2020) conducted a study on "Scottish nonprofit mental health organizational strategies to commercialize innovative products and services." As revealed in the study, many nonprofit organization (NPO) leaders lack strategies to commercialize innovative products and services to secure funding and ensure financial stability. NPO leaders who do not overcome financial challenges could face organizational failure and the inability to attain their mission. Grounded in stakeholder theory, this qualitative, single case study aimed to explore strategies that Scottish nonprofit mental health organization leaders use to commercialize innovative products and services to secure funding and ensure financial stability. The study participants were 4 leaders at a single mental health organization in Scotland. Semistructured interviews, organizational documents, government data, public data, and information from the participant organization's website comprised the data collected for this study. Identification of themes occurred using Yin's 5-step thematic analysis process, whereas data assessment and organization scoring occurred using the Baldrige Performance Excellence Program criteria. Key themes that emerged from the analysis included effective strategic planning, effective financial

management, ineffective commercialization strategy, positive work environment, and partially effective workforce development. A key recommendation for NPO leaders is to incorporate robust marketing as part of their strategy to commercialize products and services. Commercialization of mental health services and tools could result in positive social change by expanding available resources within Scotland's mental health community and creating a revenue source that will allow the NPO to continue providing vital services to the community.

Ahmad et al. (2020) conducted a study entitled, "Factors affecting nursing staff commitment at General Hospitals in Damietta City". Based on the study, commitment represents a strong desire to maintain the nursing staff of an organization; it reflects the nursing staff's to achieve the organization's goals and values, a desire to stay with the organization, and a willingness to exert much effort into the organization. The aims was to assess the factors affecting nursing staff commitment at general hospitals in Damietta City. A descriptive design was utilized with a sample of 421 nursing staff working at all inpatient units at Damietta general hospitals. The study tool consisted of three parts; part (I) personal characteristics which included personal and job characteristics; part (II) Three-component organizational commitment questionnaire to measure types of nurses' commitment and the degree of nurses' commitment to their work; part (III) factors affecting nurse's commitment questionnaire to assess the factors affecting nurses' commitment at workplace. The results showed that more than two thirds (70.5%)of nursing staff had moderate total commitment. It revealed that the highest percentage among factors affecting commitment was feeling their place of work is equitable and the lowest one was for voice concern. Therefore, the study recommended an orientation program for new nurses to know the goals, policies, objectives, and regulations of the organization and evaluate the training needs of nursing staff periodically to develop their skills and information, regular meetings between hospital administrations, nursing administrator and nursing staff to express their concerns and opinions, and discuss their work problem and solve it.

Blakely (2020) conducted a study entitled "Leadership Strategies to achieve organizational excellence." The study indicated inadequate quality management tools and processes that lead to inefficient hospital operations and poor organizational performance. Community hospital leaders who fail to modify and improve operations and organizational performance risk negatively impacting patient care and profitability. The

qualitative study intended to determine strategies community healthcare leaders use to use effective quality management approaches to better operations and achieve organizational excellence. The participants included five community healthcare leaders in the northeast United States who effectively used quality management approaches to improve operations and achieve organizational excellence. Five key strategies were identified as a result of the study: quality management tools and techniques, data measurement and analysis for performance improvement, strategic planning, leadership engagement and sponsorship, employee engagement, and deliberative management of resources.

Chubbs (2020) conducted a study on “Healthcare organizational design strategies to improve performance.” Based on the research conducted, business leaders are exploring ways to improve organizational performance through organizational design, including reviewing their organization's structures. Grounded in McKinsey’s 7S framework, this qualitative single case study aimed to explore organizational design strategies healthcare leaders used to improve organizational performance. Participants were six leaders within a healthcare organization in Alberta, Canada, who successfully developed and implemented organizational design strategies to improve organizational performance. The data collection techniques included a review of internal and external documents, a reflective journal, and semistructured interviews. Methodological triangulation and thematic analysis to complete the data analysis were used. The data analysis resulted in six key themes: leadership impact on organizational design, stakeholder engagement, staff considerations, corporate structure, organizational design strategy, and system processes. A key recommendation is that organizational leaders should complete organizational design. Implications for social change include leaders using or adapting the study’s findings to implement organizational design strategies, improve organization performance, and ultimately affect higher quality services. In addition, improved performance and culture might create sustainability, which results in increased job security and enhanced quality of life for employees.

Ubas-Sumagasyay and Oducado (2020), in a study entitled “Perceived Competence and Transition Experience of New Graduate Filipino Nurses,” argued that recruitment and hiring of new graduate nurses is seen as a potential strategy to mitigate the problem of nurse shortage. However, previous studies disclosed that new graduate nurses are inadequately prepared to enter practice and experience transition difficulties. This study

aimed to determine new graduate Filipino nurses' perceived competence and transition experience. Seventy-nine conveniently chosen new graduate nurses were surveyed in this descriptive cross-sectional research. Self-administered instruments were used to gather data. Descriptive statistics, Mann–Whitney U test, and Kruskal–Wallis test were the statistical tools employed. Results indicated that new graduate nurses had high self-reported fundamental nursing skills (M= 7.99) and core competence (M= 8.16), although areas needing improvement were identified. There were no significant differences in the perceived competence based on the length of experience, year graduated, area of assignment, sex, type of school graduated, CPD participation, and hospital bed capacity (p> .05). The major difficulty experienced by new graduates during their transition was related to changes in role expectations (72.2%). Majority expressed the need for increased support during their transition (83.5%). The most satisfying aspects of their working environment were ongoing learning (81%) and peer support (74.7%), while the least satisfying was the negative nursing work environment (55.7%). New graduate nurses are equipped with the necessary nursing skills and core competencies. However, gaps and areas needing improvement should be addressed and supported to assist them in their transition to the world of professional nursing practice. Follow up, feedback, mentoring, and preceptorship are beneficial to enhance the competencies of new graduate nurses and facilitate their successful transition into the nursing workforce.

Udo (2020) conducted a study entitled “The Relationship of Involvement, commitment, and Productivity to job satisfaction of Nurses.” Results showed that nurses play a vital role in the healthcare industry. It is important to understand factors that shape their involvement and job satisfaction, leading to enhanced patient care and retention. It was unknown whether there is a relationship between involvement, commitment, productivity, and job satisfaction in nurses in acute care hospital settings. The correlational study aimed to examine the relationship between involvement, commitment, productivity, and job satisfaction in nurses in an acute care hospital setting in Northern California. Findings indicate as nurses’ productivity increases, so does their satisfaction. Practical implications include strategies to enhance acute care nurses’ productivity.

Sellers (2019) conducted a study entitled “Exploring Strategies Organizational Development and Change Managers Need to Improve Best Ethical Practices in an Organization.” Despite the best efforts of organizations to eradicate unethical behavior by members of the organization, the problem still exists. The public has demanded that

organizations and lawmakers crack down on the issue to help identify standards for accountability despite an employee's position. The interviews were conducted with 13 professionals from varying industries and backgrounds, from frontline employees to Human Resource executives. Three emerging themes were produced in the study: first, there are two sets of standards in an organization; second, there is a breakdown in communication; third, employees are not aware of the organization's mission and vision statement; fourth, they are not aware of the chain of command; and lastly, training. The research has found that there are policies and regulations in place to divert unethical behavior in workplaces. The research highlights areas that need improvement, which can strengthen an organization's ethical atmosphere and protect employees when they are fully aware of how the organization works.

Okodogbe (2018) conducted a study on the "Relationship between human resources management practices and employee intention to leave healthcare organizations." Results showed that human resource management practices (HRMPs) are critical components associated with employee satisfaction and turnover. HRMPs have been widely documented in the literature as being significantly related to employees' intention to leave the healthcare organizations. The healthcare sector is understaffed, while the demands and health needs of the population continue to grow. As a result, employees' turnover is a great problem that the healthcare organizations experience. The purpose of the non-experimental and correlational study was to examine the relationship between four HRMPs of highly selective staffing, extensive training, compensation policy, and empowerment and intention of employees to leave the selected Long Island, New York, healthcare organization. The guiding theoretical framework of the study was based on job satisfaction theory, which pertained to employee performance in the organizations, and the theory of engagement, which is related to employee commitment, satisfaction, and employees' intention to leave healthcare organizations. Convenience sampling was used to recruit at least 152 participants from the targeted population. Four predictor variables were included in the calculation for an F test of multiple regression analysis. The study procedure was completed by providing a link to the selected sample participants, who were voluntarily required to fill out questionnaires. The results of the analysis revealed that the four HRMPs were predictors of employees' intention to leave healthcare organizations. It was recommended that the staffing procedure, providing adequate training, beneficial compensation plan, and empowerment to the employees in the

healthcare sector should be integrated into the strategic plans to sustain and improve the healthcare sector and the institution itself while curtailing employee turnover.

Garrett (2017) conducted a dissertation entitled “An Approach to Aligning leadership development with organizational strategy management.” The researcher investigated approaches that key informants and practitioners have used to successfully align leadership development and strategy management. Six key findings surfaced from the conduct of the study regarding the alignment of leadership development with strategy management. Firstly, leadership development in organizations should be differentiated to fit varying roles, yet integrated throughout the organization through similar and shared competencies. Second, leadership development competencies should be connected to and leveraged within the organization’s strategy management processes. Third, organizations should have a formal approach that aligns leadership development with the company’s current strategic management objectives and where the company is going and headed. Fourth, leadership development competencies should be in consonance with the beliefs and behaviors of senior executives. Fifth, leadership development competencies should be linked to the organization’s key results through a strategic framework. Lastly, developing leadership competencies that produce specific results was an ongoing process best achieved through action learning. Regardless of the business sector or size of the organization, the findings of this study emphasized that a successful approach to facilitating the alignment of leadership development with strategy management was an approach that incorporates leadership, communication, culture, teamwork, programs, and alignment: the components of organizational capital.

White (2019) conducted a study entitled, “Strategies for employee retention in nonprofit organizations.” According to the study, low employee retention is one of the main challenges for managers and negatively impacts an organization’s ability to survive and remain competitive. Using Herzberg’s two-factor theory, the purpose of this multiple case study was to explore strategies nonprofit sector managers use to retain employees. The participants included four (4) managers from four (4) Illinois nonprofit organizations who implemented successful strategies for employee retention. Data were collected using semistructured, face-to-face interviews, company documents, and archival records. A thematic analysis was used to analyze the data, which revealed three (3) themes: employee engagement, workplace culture, and employee feedback. The implications for positive social change include the potential to benefit communities through improvements

in unemployment rates and decreased levels of stress on families. Managers are responsible for maintaining that a strong workforce must attract, train, motivate, and retain employees. Employee engagement has been found to decrease when employees perceive the work environment to be threatening, unfair, ambiguous, or risky. Work environments consisting of adequate levels of supervisor support, organizational support, and good peer relationships will promote higher levels of employee engagement and retention. This study's results may also benefit nonprofit organization employees through better work environments and encouragement of employee engagement.

Ioannidis et al. (2019) conducted a study entitled “Change Agents and internal communications in organizational networks.” The study results showed that the adoption of change in organizational networks is conditioned by the engagement of the so-called ‘‘change agents’’ initiating ‘‘cascades of change’’ and by the internal communication among the network members. The researchers investigated how the dynamics of the adoption of change are influenced by the engagement policy of the change agents and by internal communication. The dynamics of change adoption are modeled by generalizing the discrete diffusion equation in order to incorporate both the engagement policies of the change agents and the internal communication rules. Results are obtained by simulating the solutions (change management scenario) on four (4) real organizational networks. Agents with high degrees (hubs) are found to be most suitable to act as change agents. However, the most suitable change agents are not always the senior employees. The adoption of change is much faster, if agents communicate with ‘‘local hubs’’, avoiding random contacts. Change agents feed the network members with ‘‘thin slices’’ of influence to avoid crossing the ‘‘confidence bound’’. A small increase in the size of ‘‘slices’’ results in a significant acceleration of the adoption of change. Also, the value of ‘‘planning’’ versus ‘‘no planning’’, is estimated in the context of Change Management.

Legaspi (2019), in the study entitled “A comparison of job satisfaction among Filipino nurses employed in the Philippines and overseas,” showed that Filipino nurses employed both locally and overseas have an average level of general satisfaction. Both groups also showed a high degree of intrinsic satisfaction and an average degree of extrinsic satisfaction. No significant difference was found in the level of general, intrinsic, and extrinsic job satisfaction of locally and overseas-employed Filipino nurses. The study found that social service, an intrinsic factor, is the major motivating force behind job satisfaction. Workload, an extrinsic factor, is the most common problem encountered by

both groups of nurses. Salary is one of the factors keeping Filipino nurses overseas satisfied, while it is also one of the factors causing dissatisfaction among locally employed nurses.

Another study was conducted by Lymon (2019) entitled, “An analysis of employee motivation after metamorphose, conglomerated public health care systems.” Based on the study, a global epidemic of metamorphosed, conglomerated health care systems changed the face of public health care organizations. The problem is that public healthcare organizations merge into new systems, but the culture of each merged organization has not been formed under the new system. Public administrators, healthcare workers, and the Department of Health and Human Services are affected when there are issues in healthcare behavioral practices and performance outcomes. The research found that employee motivation is hard to achieve when there are issues within the internal structure of a new system. Using Herzberg’s motivation-hygiene and Tajfel and Turner’s social identity theories as the foundation, this correlational study examined the statistical relationship between growth opportunities, organizational culture, monetary compensation, and employee motivation. Secondary data were used from a sample of 3,033 healthcare workers from two (2) English hospitals in the United Kingdom. The study’s results concluded that growth opportunities, organizational culture, and monetary compensation significantly correlate with employee motivation.

Schenk (2019), in the study entitled “A group development program based on transformational leadership to improve team performance,” posited that as reimbursement models move from volume-based to value-based, organizations increasingly depend on meeting patient outcome goals in order to achieve their budgetary targets. Leadership teams are a vital part of healthcare organizations, and their performance is crucial to overall performance. The organization of interest saw a group of strong individual leaders struggle with outcome production due, in part, to overall team dysfunction. Using available evidence-based assessment tools and resources, the project program was developed to deliver a year-long program outline focused on the precepts of transformational leadership, including a foundation of trust to improve professionalism, the ability to inspire, promote effective interpersonal relationships, and business competencies to drive positive change.

Bel et al. (2018) completed a study entitled “Managing Change: Communication, Managerial Style and Change in Organizations.” The results of the study showed the interplay between communication, manager attributes, and the probability that an establishment successfully implements a significant change. Change requires both sufficiently strong advocacy and enough communication to help overcome inertia inside the firm, and posit that frequent communication can be costly, particularly with strong managers and in larger establishments. The theoretical predictions are consistent with the study’s empirical analysis wherein, utilizing uniquely detailed establishment-level data, the researchers found out that firm size, regular communication, and result-oriented managers are all positively associated with change. However, the use of frequent communication in firms that successfully implemented a significant change is moderated when managers tend to be strongly focused on results and in larger establishments. This suggests that organizations wishing to foster change should consider the interaction between manager attributes and communication protocols.

In the investigation by Labrague et al. (2018) entitled “Perceptions of Organizational Commitment and Turnover Intention among Rural Nurses in the Philippines: Implications for Nursing Management”, it was revealed that the unrelenting migration trend of Filipino nurses to other countries has threatened the quality of patient care services in the country. Despite this trend, no studies have been identified examining nurses’ organizational commitment and turnover intention among rural nurses in the Philippines. Two hundred nurses from nine rural hospitals in the Central Philippines were asked to participate in the study and 166 nurses responded (an 83% response rate). Findings revealed that Philippine nurses were moderately committed (3.13 ± 0.24) to and were undecided (2.42± 0.67) whether or not to leave their organization. Nurses’ age (P=0.006), gender, (t =-2.25, P=0.026), education (t = 2.38, P<0.001), rank (t = 4.38, P<0.001), and work experience (t = 2.18, P=0.031) correlated significantly with organizational commitment, while nurses’ age (P=0.028) and education (t=1.99, P=0.048) correlated significantly with turnover intention. An inverse relationship was identified between organizational commitment and turnover intention (r=-0.22, P=0.005). The findings of this study highlight the need for the formulation and implementation of interventions to promote life-long commitment in nurses and to reduce turnover rates.

As shown in Krishnan’s (2018) study on “Organizational Change Readiness: Effects of Organizational Structure and Leadership Communication in Organizational Change.”

Similar to other financial organizations, life insurance institutions are dealing with changes caused by the aging of the American population and technological advances. In addition, they are dealing with changes in the cultural and economic environment. Since multiple organizational change processes have failed to achieve the desired result, the topic of organizational change readiness needs to be addressed. This dissertation looks into organizational change models to identify the factors that help it embrace change–to be change-ready. This dissertation discusses the models of organizational change preparedness and change readiness, focusing on organizational leaders' reaction to external environmental changes. The study found that organizational structure redesign and effective communication throughout the organization are two factors that assist with organizational change readiness. Using a systematic review of relevant literature and applying evidence-based research methodology, this dissertation found evidence supporting the arguments that organizational structural changes and effective communication assist leaders in making the desired changes that deliver the results they are looking for. This study focuses on specific factors within organizational change literature such as organizational change preparedness, organizational change readiness, organizational structural change, and the influence of effective leadership communication on organizational change.

Chiavoghi and Emerole (2017) conducted a study entitled, "Effects of Change Management on Employee Commitment – A Study of Selected Deposit Money Banks in Umuahia." This study examined the effect of change management on employee commitment to deposit money banks. A cross-sectional research survey was employed. The accessible population consists of ten (10) banks using a simple random sampling technique. A total of 122 staff were surveyed. Sample size is 93 using Taro Yamane. The validity of the instrument was ascertained using face validity. The reliability of the instrument was determined using the Cronbach alpha test. Spearman's Rank Order Correlation Coefficient (rho) was used to test the hypotheses with the aid of SPSS (20.0). The study's findings revealed that change management has a positive significant effect on employee commitment. The study concluded that change management that is based on communication and employee participation will enhance employees' commitment in the organization. Firstly, it recommended that bank managers should adopt communication as a strategy to overcome resistance to change in the workplace. Secondly, managers of other financial institutions should encourage their employees to participate in the change management process.

Devera and Maniago (2017), in their study entitled, “Nurses’ perceptions on professional practice environment and job satisfaction in select hospitals of Zambales, Philippines,” which is a descriptive-survey study aimed to determine the perceptions of nurses on professional practice environment and job satisfaction in select hospitals in Zambales, Philippines. Research tools adopted from the Nurses’ Work Index-R (Aiken and Patrician, 2000) and the Nurses’ Job Satisfaction Scale (Yang et al., 2014) were utilized to gather data from 180 hospital staff nurses. Results of the pilot study revealed that the internal content validity index was .974, and both professional practice environment (α=.943) and nurses’ job satisfaction (α=.830) yielded a reliability coefficient greater than 0.70. Ethical clearance was properly secured prior to the distribution of survey questionnaires. The findings revealed that the respondents agreed to the aspects of professional practice environment (PPE) in their workplace, such as supportive management, nurses’ involvement and acknowledgment of professionalism, quality of care and collaboration, and adequate resources. On the other hand, they were satisfied with the aspects of job satisfaction in terms of benefits and promotion, human relationships, workload, and job environment. Hospital management should maintain a supportive workplace that encourages nurses to remain in the health workforce and enables them to perform effectively. Moreover, promoting social relationships and interactions among nurses and other hospital personnel will enhance interpersonal relationships in the workplace. Cohesion, collaboration, and good communication with colleagues will assure quality care for patients. Thus, health policy-makers and managers must promote a sound professional practice environment.

Fernet et al. (2017) conducted a study entitled “Motivational Pathways of Occupational and Organizational Turnover Intention among Newly Registered Nurses in Canada.” As findings showed, staff turnover is a major issue for healthcare systems. In a labor shortage, it is critical to understand the motivational factors underlying turnover intention in newly licensed nurses. Cross sectional data were collected from a sample of 572 French-Canadian newly registered nurses working in public healthcare in the province of Quebec, Canada. These results highlight the complexity of the motivational processes at play in the turnover intention of novice nurses, revealing distinct forms of commitment that explain how motivation quality is related simultaneously to the intention to quit the occupation and the organization. Healthcare organizations are advised to promote autonomous over controlled motivation in order to retain newly recruited nurses and sustain the future of the nursing workforce.

Gerbec (2017) conducted a study on “Safety change management – A new method for integrated management of organizational and technical changes.” Research showed that changes are a daily reality in the process industry and potential implications on major accident hazards must be properly managed. Management of change is a part of safety management, however, changes are often complex and usually involve both technical and organizational aspects. The researcher presented a new integrated method to make a distinction and named it a ‘‘Safety change management” to evaluate and manage change proposals, considering both technical and organizational dimensions in an integrated way. The plant managers involved found the proposed method detailed, effective, useful and transparent.

Lapeña et al. (2017) accomplished a study entitled “Transformational and Transactional Leadership Styles of Nurse Managers and Job Satisfaction among Filipino Nurses: A Pilot Study.” Based on the study collected from one hundred staff nurses in selected tertiary hospitals in Manila, it was found that Filipino nurses rated their level of satisfaction (M=3.37) from high to a moderate extent along with professional autonomy (M=3.91), work environment (M=3.81), work assignment (M=3.61), and benefits (M=2.71). Participants agreed that their nurse managers utilized either transformational or transactional leadership styles. Findings indicate that transformational ($r=0.558$, $p<0.000$) and transactional ($r=0.528$, $p< 0.000$) leadership styles of nurse managers were correlated to nurses’ job satisfaction. The finding explicates that Filipino nurses were satisfied with their professional autonomy, work environment, and work assignment but moderately satisfied with work benefits, which were also apparent in the global literature. Furthermore, the results indicate that leadership styles are related to the overall job satisfaction of among nurses.

Roberts (2017) in his study entitled, “Factors that Influence Successful Organizational Change in Corporations: Examination of Change Management, employees' Reaction to Change, and Change Outcomes” ascertained that corporations are confronted with two challenges today: the increasing demand for change in order to stay competitive and the implementation of successful organizational change. Although they usually bow to the demand for change, studies have found that more change initiatives fail to meet desired outcomes. Organizational change failure is often attributed to management style, employee reaction, and failure to integrate change outcomes. Organizational change is

the process in which an institution changes its culture, operational methods, structure, strategies or technologies. This dissertation uses a systematic literature review to examine leadership style, employees' reactions to change, and change outcomes management. The relationship between these three variables was examined in order to identify the factors that influence successful organizational change in corporations. It was found that transformational leadership style, organizational change readiness, and effective communication are three key factors that influence successful organizational change. Transformational leaders create and provide a vision for change and maintain relationships with followers. Organizational readiness involves planning, developing strategies, and implementing change. Specifically, leadership and readiness impact employees' commitment, beliefs, attitudes, and intentions toward change. Communication provides clarity and direction and enforces commitment to change. In conclusion, the findings imply that a combination of leadership and managerial skills can lead to successful change management. An organization's preparation for change through effective communication with followers can influence successful organizational change.

Dones et al. (2016), in the study entitled "Working environment of nurses in the Philippines," posited that the work environment has been described as an important factor in the job satisfaction of nurses and the quality of service provided. However, little is known about the present work environment of Filipino nurses in the country. This study used a cross-sectional design to describe work environment variables affecting Filipino nurses, determine the degree of nurses' job satisfaction; and determine their intention to remain in their present work environment. A self-administered survey was developed by the study team and was distributed during the PNA national conference through the Chapter Presidents. This study discovered that the lowest positive responses were in the Physiologic and Safety Needs but despite this result, nurses reported high job satisfaction and intend to remain in their present work environment.

Lee and Raschke (2016), in the study entitled "Understanding employee motivation and organizational performance: Arguments for a set-theoretic Approach," said that empirical evidence demonstrates that motivated employees mean better organizational performance. The conceptual paper aims to articulate the progress made in understanding employee motivation and organizational performance and suggest how the theory concerning employee motivation and organizational performance may be

advanced. To advance current thinking, researchers propose a set-theoretic approach to leverage employee motivation for organizational performance.

Radakovich (2016) conducted a study entitled “The Relationship between Organizational Culture, Intrinsic Motivation, and Employee Performance: A Systematic Review and Meta-analysis.” This study aimed to explore the relationship between specific organizational cultural factors (autonomy and meaningful work), intrinsic motivation, and employee performance through a systematic review and meta-analysis. Three separate studies were performed, one for each predictor variable: autonomy, meaningful work, and organizational culture/climate. The first study concluded that autonomy is a predictor of performance; this relationship is partially mediated through intrinsic motivation. The second study concluded that meaningful work is a predictor of performance. The third study was conducted for comparative purposes only and no solid conclusions could be drawn from this study.

In the study done by van der Hoek et al. (2016) on “Goal Setting in Teams: Goal Clarity and Team Performance in the Public Sector”, they found out that with the rise of performance management, work in the public sector has changed. An output focus has become more common. Other changes include decentralization and managing organizations more horizontally. Setting performance goals and working in teams exemplify these developments. Despite extensive literature on goal setting, research on goal setting in teams and empirical studies in public organizations have been largely absent. This study contributes to the fields of public management and teamwork by examining whether and under what team conditions clear goals contribute to team performance and commitment in the Dutch public sector. Analyses on survey data (n = 105 teams) show that both goal clarity and self-management positively affect team performance. The present analyses have shown that clear team goals are important for team performance. It is, therefore, beneficial for teams to make an effort to clarify their goals and create a good common understanding of them.

Santos (2015), in his study entitled “Mentoring, job satisfaction, job dissatisfaction, and organizational commitment among Graduate nurses,” concluded that professional status (a component of job satisfaction) and pay and administration (a component of job dissatisfaction) had the largest impact on determining the nurses’ organizational

commitment. The study found that job satisfaction and job dissatisfaction were mediated by mentoring, which in turn influenced organizational commitment.

Rusu and Avasilcai (2014) in the study entitled, “Linking Human Resources Motivation to Organizational Climate” emphasized that motivation has a central role in achieving high performances within organizations. As the organizational climate can be closely correlated with employees’ motivation, providing a motivating environment in industrial firms depends on managers’ ability to create a supportive organizational climate. The main objective of this paper is to underline the most relevant dimensions of the organizational climate that increase employees’ intrinsic and extrinsic motivation, according to Herzberg’s dual factors theory. By analyzing the relationships between organizational climate dimensions and motivation, the results demonstrated the influence of organizational climate on the level of employees’ motivation.

Meade (2013) conducted a study entitled, “Developing a change management plan for organizational transformation.” As findings revealed, strategic planning and the establishment of quality objectives are the underpinnings for transformational change management. In today’s organizational setting demonstrating the ability to change effectively and efficiently is essential for organizational success. Transformational change requires executive sponsorship, the ability to establish and communicate a strategic vision for the change initiative, and the selection of credible team members from the organization, who can influence stakeholders and engage and guide the organization through the change itself. The focal point of this research is the application and coupling of “The Eight-Stage Process to Create Major Change,” established by John P. Kotter, and the “Prosci® ADKAR® (Awareness, Desire, Knowledge, Ability, Reinforcement) model, which acknowledges the people side of change. Through examination and review of the research results, it becomes evident that both models, when combined, provide a comprehensive and repeatable framework from which to drive organizational change and transformation.

Pinkney (2013) conducted a study entitled “Healthcare Reform: Innovative and other proven strategies for successfully managing and implementing organizational change.” The study was done in order to qualify innovative and other proven change strategies that assist the healthcare industry and healthcare organizations with implementing organizational change. Accordingly, evidence shows that healthcare spending in the

United States grew ten times the base rate in 1980 from $256 billion to $2.6 trillion in 2010. Compounding this problem is the limited availability to patient care and the diminishing value of care in many hospitals. The US healthcare industry cannot survive under these circumstances without changing the overall system. In order for healthcare organizations to survive, they must embrace innovative and other proven strategies to remain competitive. The study identified change strategies for healthcare organizations and the healthcare industry to utilize in order to manage organizational change adequately. The dissertation concluded with strategies such as information technology, the use of incentives, and best practices. These strategies will assist healthcare organizations when undergoing organizational change, and they may serve to lessen the burden of healthcare costs, increase accessibility to care, and provide better quality healthcare.

Raab (2013), in his study entitled, “Developing integrated Change processes: Increasing Efficiency in Change Management Initiative,” concluded that change management and project management are becoming a vital and integrated part of organizations in order to stay viable and maintain a competitive advantage. However, some organizations still do not use a change management process or have a process that does not allow the organization to operate at a high efficiency. The study examined project management and organization development practices to determine if current theories can be integrated and adapted for small, public, information technology (IT) organizations. Based on the information reviewed, a model was developed that organizations can utilize to instigate change with a holistic view, incorporating procedural project management processes with psychological organization development processes.

In another study by Steiger (2013) entitled, “An examination of the influence of organizational structure types and management levels on knowledge management practices in organizations,” the difference between organizational structure types and management levels in terms of perceived levels of knowledge management practices within organizations were analyzed. In San Diego County, data were collected from a sample of 155 individuals employed. Results showed that the knowledge management practices of knowledge transfer, information filtering, and knowledge culture are influenced by organizational structure type. Hence, the researcher concluded that a need exists for management to analyze the structure of its organization to identify opportunities for maximizing efforts related to knowledge management practices. The matrix

organizational structure type returned the highest perceived levels of knowledge transfer, information filtering, and knowledge culture, relative to the other organizational structure types. The matrix organizational structure type is heavily associated with the freedom and need to share knowledge. Further, collaboration is a requirement inside a matrix organization, and mutual adjustment is its primary coordinating mechanism. These characteristics of the matrix organizational structure type contribute toward the results that indicate the matrix organizational structure type cultivates the highest perceived levels of the aforementioned knowledge management practices, relative to the other organizational structure types.

Zeffane et al. (2011), in their study entitled “Communication, Commitment & Trust: Exploring the Triad,” argued that despite growing interest in the issues of communication, trust, and commitment, studies examining the interplay between all of these three variables are lacking. This paper attempts to address this gap. It draws on survey data involving 244 employees from a medium-sized food processing organization operating in NSW (Australia). The study explored relationships between communication, trust, and commitment. Trust was measured by a six-item composite scale assessing overall beliefs in good intentions of organization participants as well as the degree of faith/trust in various actors in the organization, including co-workers and managers at various levels of the hierarchy. Correlation analysis revealed that perceived effectiveness of communication between management and employees, commitment, pride in working for the company, and trust were significantly interrelated. However, the relationship between Trust and Communication was the strongest, with commitment also showing a significant relation to Trust. On the other hand, the relationship between commitment and communication was relatively weaker. The results demonstrate the importance of effective communication within organizations as it relates to trust and organizational commitment. In particular, the study shows that trust and commitment do not just happen; they are forged and maintained through effective communication. Implications for management practice and future research are discussed.

Synthesis

In summary, the reviewed literature and studies focused on the importance of many factors that could contribute to nurses’ commitment, underlining the most relevant dimensions of organizational strategies, change management practices, and motivation.

A number of studies that measured commitment had merely used miscellaneous instruments that measured a range of other concepts of worker commitment. Further, to improve the delivery quality of care, nurses should be the focus of attention in the management of human resources in the field of health care. There were institutions that have been targeted in studies regarding nurses' commitment. Such institutions include private and public hospitals, health care organizations, academe, and clinics. Highlighting the research outcomes from the sampled studies, it clearly shows that commitment was very instrumental in the manner through which it influences retention, patient satisfaction, organizational turnover, job satisfaction, increasing efficiency, and business viability of the organization. Among the most prominent recommendations in many literature reviews was the need for strategic planning, mentoring, leadership and managerial style, human resource management practices, communication, teamwork and employee engagement with a clear focus on meeting the demand for a healthy environment for work.

Providing quality nursing care to patients was the primary concern of nurses, specifically in all government and private hospitals. Further, the commitment of nurses in Sarangani Province and General Santos City can be influenced by varying factors, including organizational strategies, change management practices, and motivation. The reviewed studies contributed to formulating a development plan for nurses in the hospital and other healthcare settings. For this purpose, the study was conducted.

Research Questions

This study aimed to determine the extent of nurses' commitment in Sarangani Province and General Santos City as influenced by organizational strategies, change management practices, and motivation to present proposals for a development program. Specifically, it answered the following questions:

1. To what extent are the implementation of organizational strategies in the organization in terms of:
    1.1 goal setting and visioning;
    1.2 human resource management practices;
    1.3 operational excellence; and
    1.4 corporate culture?
2. To what extent are the implementation of change management practices in terms

of:

2.1 leadership;

2.2 communication; and

2.3 development programs?

3. What is the level of motivation in terms of:

3.1 work environment;

3.2 compensation;

3.3 promotion and rewards; and

3.4 resources?

4. What is the level of commitment in terms of:

4.1 employee engagement;

4.2 job satisfaction; and

4.3 career development?

5. Is there a significant relationship between the following:

5.1 organizational strategies and commitment;

5.2 change management practices and commitment; and

5.3 motivation and commitment?

6. Is there a significant effect of organizational strategies, change management practices, and motivation on nurses' commitment?

7. Based on the findings of the study, what development program can be developed?

METHODOLOGY

Respondents of the Study

The respondents of the study were nurses of the identified Department of Health (DOH) accredited hospitals in Sarangani Province and General Santos City. They were those who were currently employed in the hospital for one year and above. They were chosen since they have direct knowledge of the organization's operations. The Hospital Administrators, Human Resource Management and Development Officers, and Chief Nurses served as the key informant interviewees during the cross-validation process. The respondents were asked to answer the items included in the survey questionnaire, while the selected key informants answered questions during the interview. In deciding the sample size of this study, the researcher used Cochran's sample size formula. The

Cochran formula allowed the researcher to calculate an ideal sample size given a desired precision level, confidence level, and the estimated proportion of the attribute present in the population. Cochran's formula was considered suited to situations with large populations (Cochran, 1977). In this case, there was no need for ‘correction’ since the number given by Cochran’s formula was lower than the population in this study which was 625 nurses. The researcher set p at 0.05 for this analysis and needed 95 percent confidence and at least five (5) percent accuracy, plus or minus. A 95 percent confidence rating gave 1.96 values for researcher Z. The researcher then obtained ((1.96)2 (0.5) (0.5)) / (0.5) 2 = 385. In order to give the researcher confidence levels, a random sample size of 385 respondents was sufficient. In addition, the researcher used proportionate stratification in order to get the sample size by hospital. This random sampling approach warranted that each hospital is sufficiently distributed within the study's entire sample population. The proportionate stratified random sample was obtained using the formula: (sample size/population size) x stratum = size or number of nurses per hospital in this study.

Research Instrument

This study utilized a survey questionnaire and an interview guide in data gathering. The Survey Questionnaire was the primary instrument in data gathering, which was developed by the researcher. It was based on the gathered theories and reviewed related literature and studies of the subject of the study. Additionally, it was reviewed, validated, and improved after checking and approval of the research adviser, dissertation panel members, and five expert validators. The questionnaire was rated based on a series of criteria. The key Informant Interview (KII) guide was considered to support the responses generated from the survey questionnaire. The questionnaire was divided into four (4) parts. The first part of the questionnaire evaluated the extent of organizational strategies in terms of goal setting and visioning, human resource management practices, operational excellence, and corporate cultures. The second part determined the extent of change management practices regarding leadership, communication, and quality programs. The third part looked into the level of motivation in terms of work environment, compensation, promotion and rewards, and resources. The fourth part examined nurses' commitment levels regarding employee engagement, job satisfaction, and career development. For the qualitative part of the study, KII was used. It was developed and

validated. It contained a list of questions focusing on organizational strategies, change management practices, motivation, and commitment.

Data Gathering Procedure

Before administering the survey questionnaire, the following procedures were observed. Permission was sought from the Chief of Hospital and Hospital Administrator in identified DOH-accredited hospitals of Sarangani Province and General Santos City through a letter. When approval was given, the validated survey questionnaire was administered to the nurses and the researcher conducted the Key Informant Interviews (KII). A cover letter and the verified survey questionnaire were distributed to the respondents. The survey questionnaires were retrieved after three (3) days from the date these were distributed to give ample time for respondents to answer critically. The Key Informant Interview (KII) was used to triangulate the data obtained based on the findings of the survey questionnaire. The KII's rigors, protocol, and ethics were guaranteed to the respondents from the identified hospitals.

Data Analysis and Interpretation

This study utilized different strategies and methods to interpret the data. These techniques included using mean, spearman’s correlation, stepwise linear regression, and multiple linear regression. The mean was used to measure the central tendencies of the gathered data, which helped explain the extent of Organizational Strategies, Change Management Practices, Motivation, and Commitment. Spearman's correlation coefficient was utilized to measure the strength and direction of the variables. This was used to determine the relationships between the independent variables, namely, organizational strategies, change management practices, and motivation, and the dependent variable (i.e., commitment). The following scoring guide was used to evaluate the extent of organizational strategies, change management practices, and nurses' motivation and commitment.

Multiple Linear Regression was used to determine the value of the dependent variable (i.e., commitment) using the independent variables (i.e., organizational strategies, change management practices, and motivation). It was used in this study in order to determine the overall fit of the model and the relative contribution of each of the predictors to the

total variance explained. Key informants were interviewed to supplement the data gathered from the survey questionnaires, which enriched the interpretations of the study's findings.

Box 1

Scoring Guide, Description in Determining the Extent and Level of Organizational Strategies, Change Management Practices, Motivation and Commitment

Mean Range	Status	Description
4.21 – 5.00	Very Highly Extensive	Excellent degree to which basic measure of organizational strategies, change management practices, motivation and commitment was observed.
3.41 – 4.20	Highly Extensive	The high degree to which specific measure of organizational strategies, change management practices, motivation and commitment was detected.
2.61 – 3.40	Moderately Extensive	The average degree to which basic measure of organizational strategies, change management practices, motivation and commitment was observed.
1.81 – 2.60	Less Extensive	A specific indicator of organizational strategies, change management practices, motivation and commitment is noted low.
1.00 – 1.80	Least Extensive	A specific indicator of organizational strategies, change management practices, motivation and commitment was observed very little.

Ethical Considerations

This study involved respondents employed in DOH-accredited hospitals in Sarangani Province and General Santos City. As respondents were approached, a verbal explanation of the purpose, duration, possible benefits, and burden of participating in the study was provided. All these were detailed on an information sheet. Respondents were advised that the written and signed consent is not a contract. They were made aware that inclusion is voluntary and they are free to withdraw at any time. All respondents' identity and privacy were protected. Anonymity was maintained, and all paper data were destroyed after transferring to a password-protected database that was accessible only

to the researcher and the statistician. The research paradigm did not require withholding any information about the study. As the respondents completed the survey questionnaire, they were informed that they could contact the researcher anytime for questions and clarification. Throughout the duration of the study, participants were allowed to request and be provided with ongoing information and final results.

Scope and Delimitation

This study focused on the influence of organizational strategies, change management practices, and motivation on nurses' commitment in Sarangani Province and General Santos City. This research covered organizational strategies, change management practices, and motivation as independent variables of the study and nurses' commitment as the dependent variable. The study covered hospitals accredited by the Department of Health (DOH) in Sarangani Province and General Santos City. This study was limited to including randomly sampled nurses from these hospitals. The study was conducted from December 2021 to February 2022. It presented only concepts based on the data gathered from the respondents through an answered survey questionnaire and from the key informant interview. Further, the influence of organizational strategies, change management practices, and motivation on nurses' commitment was determined using Spearman's correlation and multiple linear regression.

RESULTS

Extent of Implementation of Organizational Strategies in the Organization

The data presented in Table 1 pertain to the extent to which organizational strategies, such as goal setting and visioning, human resource management practices, operational excellence, and corporate culture, have been implemented.

Table 1

Extent of Implementation of Organizational Strategies in the Organization

Parameters	Mean Value	Description
1. Goal setting and visioning	4.18	Highly Extensive
2. Human resource management practices	4.22	Very Highly Extensive
3. Operational excellence	4.06	Highly Extensive
4. Corporate culture	4.43	Very Highly Extensive
Grand Mean	4.22	Very Highly Extensive

Goal Setting and Visioning

Goal setting and visioning have a statistical value mean of 4.18. The mean value denoted "highly extensive." Nurses believe that the organization has a clear plan, vision, and set of direction in place to achieve the various organizational goals and objectives.

Human Resource Management Practices

The mean level value of human resource management practices is 4.22, which is interpreted as "very highly extensive." Human resource management practices were visible in the organization. During the Key Informant Interview, participants claimed that the hospital and human resource management offices have established and promoted decent work and growth.

Operational excellence

Results revealed that the mean value of 4.06 for operational excellence is assessed as "highly extensive." Based on the data, nurses believed that hospital management implemented strategies to ensure a safe work environment and quality hospital operations, especially during this pandemic.

Corporate culture

Table 1 in the previous section presented that corporate culture has a statistical mean value of 4.43 and was interpreted as “very highly extensive.” Corporate culture was strongly evident in the hospitals of Sarangani Province and General Santos City. Nurses believed that the hospital organization maintained activities, values, and beliefs that are widely shared and strongly held throughout the organization.

Extent of Implementation of Change Management Practices in the organization

Table 2 presented the extent of implementation of change management practices in hospitals of Sarangani Province and General Santos City regarding leadership, communication, and development programs.

Table 2
Extent of Implementation of Change Management Practices in the organization

Parameters	Mean Value	Description
1. Leadership	4.21	Very Highly Extensive
2. Communication	3.57	Highly Extensive
3. Development Programs	4.01	Highly Extensive
Grand Mean	3.93	Highly Extensive

Leadership

The mean score presented in Table 2 for leadership as an indicator of change management practices is 4.21, which is assessed as “very highly extensive.” Based on the data, nurses believe that hospital leaders are committed to the change process and use different strategies during the change process. In the key informant interview (KII) conducted, some participants stated that leaders of the organization should take the driver's seat in institutionalizing change, and it should create a ripple effect on employees in order to achieve organizational goals. As experienced, when employees hear, see, and feel the positive outcome of change from the management, they get involved. Further,

one participant said that change is part of any hospital organization. Growth is important for us to deliver quality hospital care, and if our employees are well informed and educated by the management, employees commit to the planned change. Another participant said that, when there are management practices being planned, the staff's welfare is also considered before implementing it.

Communication

The mean level value of communication is 3.57, which is interpreted as “highly extensive.” The hospital organization's communication flow during a change process was visible, just as it was with leadership. In fact, it surfaced during the KII, as one respondent claimed that during a planned change, the respective department heads and management actively involved employees in the process and utilized various communication strategies.

Development Programs

Development programs received a mean value of 4.01, which is described as “highly extensive.” This demonstrated that the organizations have programs designed to improve nurses’ skills, knowledge, and attitudes during the change process, boosting nurses' commitment to hospitals.

Level of Motivation

This section discussed nurses' motivation level regarding work environment, compensation, promotion, and rewards and resources, as presented in Table 3.

Work Environment

Work environment gets a mean of 4.24 which is interpreted as “very highly extensive”. This meant that the hospitals in Sarangani Province and General Santos City had a positive work environment that promoted employee well-being, productivity, support, and growth. The Key Informant Interview (KII) results showed that nurses were motivated to work in a supportive, satisfying, and empowering environment with a culture of continuous improvement and teamwork.

Compensation

Table 3 showed the mean of 3.89 for compensation, interpreted as “highly extensive.” The results showed that nurses are aware of the hospital's salary structure and compensation policy and agree that they are fairly compensated. A participating nurse said, “Although the salary is not too good, I am satisfied with my nursing job because people in our hospital give me a lot of respect.” (A5, L255-257) Another participant said, “I think one factor that mainly makes me satisfied with this nursing profession is the love to care for patients and not merely the salary.” (A7, L268-269) As expressed by one of the participants, even though the salary received by nurses was not very attractive, some nurses are satisfied with the nursing job because of the positive contributions and differences they make in the lives of the patients on a daily basis. The respondents opined that training and promotions, availability of medical equipment and suppliers, prestige, big pay, and bonuses are specific factors that prevented turnover and improved job satisfaction. The participants argued that employee respect, competitive pay, recognition, love, and promotion were essential psychological needs and intrinsic factors necessary for high job satisfaction.

Table 3
Level of Motivation

Parameters	Mean Value	Description
1. Work Environment	4.24	Very Highly Extensive
2. Compensation	3.89	Highly Extensive
3. Promotion and Rewards	3.88	Highly Extensive
4. Resources	3.76	Highly Extensive
Grand Mean	3.94	Highly Extensive

Promotion and Rewards

The mean level of promotion and rewards is 3.88, which is interpreted as “highly extensive.” This mean value denotes that nurses are aware of the organization's appraisal system.

Resources

In Table 3, the mean score of resources is 3.76, which is interpreted as “highly extensive.” This implies that nurses believed that the organization provided training, key performance measures, and equipment, supplies, and resources necessary for nurses to perform their duties.

Level of Commitment

Table 4 showed the indicators of commitment: employee engagement, job satisfaction, and career development. The weighted mean was used to describe the results of the study.

Table 4
Level of Commitment

Parameters	Mean Value	Description
1. Employee Engagement	4.43	Very Highly Extensive
2. Job Satisfaction	4.22	Very Highly Extensive
3. Career Development	4.46	Very Highly Extensive
Grand Mean	4.37	Very Highly Extensive

Employee Engagement

The mean score for employee engagement is 4.31, interpreted as “very highly extensive.” Results from KII showed that nurses’ understanding of their work and responsibilities and

their capacity to respond to designated assignments were proportionate with the completion of assigned tasks. Employees who are engaged and committed to the organization and its goal care about the hospital, their team, and their patients. There was a significant link between employee engagement and patient care and satisfaction improvements. Employee engagement was strongly evident in the hospital organization, where nurses showed strong commitment to work, tasks, and responsibilities.

Job Satisfaction

Based on the result shown in Table 4, the statistical mean of job satisfaction is 4.22. The mean value is interpreted as “very highly extensive.” The data showed that individuals who form many positive relationships with their peers, supervisors, and the workplace become more committed, which positively influences job satisfaction.

Career Development

The mean value for career development is 4.46, which is interpreted as “very highly extensive.” The results showed that nurses believed that programs and activities were conducted in the organization to ensure personnel improvement. The findings supported the prior research findings of the positive relationship between organizational support and career development.

Relationship between Organizational Strategies and Commitment

Table 5

Relationship between Organizational Strategies and Commitment

Correlations

			Organizational Strategies	Commitment
Spearman's rho	Organizational Strategies	Pearson Correlation	1	.355**
		Sig. (2-tailed)		.000
		N	344	344
	Commitment	Pearson Correlation	.355**	1
		Sig. (2-tailed)	.000	

	N	344	344

Table 5 presents the relationship between organizational strategies and commitment. Spearman's Correlation Coefficient was utilized in order to establish the relationship between organizational strategies and commitment. The correlation results showed a significantly low positive correlation r = 0.355 (sig.=0.000) between organizational strategies and commitment. This positive correlation meant that organizational strategies are directly proportional to commitment. The higher the implementation of organizational strategies, the commitment of nurses is also high. However, when there is low implementation of organizational strategies, the commitment of nurses will also be low. Hence, the null hypothesis (Ho_1), which stated that there is no significant relationship between organizational strategies and nurses' commitment, is rejected. Thus, there is evidence that there is a significant relationship between organizational strategies and commitment. The emphasis is certainly on commitment and the willingness and determination on the part of management. When the entire organization is committed to the same mission, goals, and objectives, then there is an effective organization.

Relationship between Change Management Practices and Commitment

Table 6 presents the result of the relationship between change management practices and commitment. The correlation between change management practices and commitment is significantly very low positive, with a correlation value of r = 0.164 (sig.=0.002). The positive correlation between change management practices and commitment signified that the higher the change management practices in hospitals of Sarangani Province and General Santos City, the higher the commitment of nurses.

Table 6

Relationship between Change Management Practices and Commitment

Correlations

		Change Management Practices	Commitment
Spearman's rho	Pearson Correlation	1	.164**

	Change Management Practices	Sig. (2-tailed)		.002
		N	344	344
	Commitment	Pearson Correlation	.164**	1
		Sig. (2-tailed)	.002	
		N	344	344

This finding was supported by the statements of the participants during the KII wherein the participants mentioned that organizations conduct consultations and mentoring programs during the change process. However, some participants mentioned that some organizations also failed to inform nurses on the change process. The null hypothesis, which stated that (Ho2) there is no significant relationship between change management practices and nurses' commitment, is rejected.

Relationship between Motivation and Commitment

Results using SPSS about the relationship between motivation and commitment

Table 7

Relationship between Motivation and Commitment

Correlations

			Motivation	Commitment
Spearman's rho	Motivation	Correlation Coefficient	1.000	.214**
		Sig. (2-tailed)	.	.000
		N	344	344
	Commitment	Correlation Coefficient	.214**	1.000
		Sig. (2-tailed)	.000	.
		N	344	344

are shown in Table 7. The correlation test results showed a significantly low positive correlation between motivation and commitment with an r-value of .214 (sig.=0.000). This positive correlation may indicate that motivation would result in positive commitment of nurses although the significance is low. Although the significance is low, there is still a significant relationship between the two variables. The positive correlation can be attributed to the various practices of hospital organizations in Sarangani Province and General Santos City, wherein the management has provided a safe working environment, adequate pay, rewards, and resources, as mentioned during the Key Informant Interview. Therefore, the null hypothesis (Ho3), which states that there is no significant relationship between motivation and commitment, is rejected. Thus, there is a shred of evidence that there is a significant relationship between motivation and commitment.

Effects of Organizational Strategies, Change Management Practices, and Motivation on Commitment

Multiple linear regression was utilized to determine which organizational strategies, change management practices, and motivation significantly affect commitment.

Table 8

Effects of Organizational Strategies, Change Management Practices and Motivation on Commitment

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.353[a]	.125	.098	.26586

a. Predictors: (Constant), Organizational Strategies, Motivation, Change Management Practices

Organizational strategies, change management practices, and motivation showed a weak Pearson correlation of .353. Further, the coefficient of determination R^2 of 12.5 is also weak because this means that 87.5% of the changes in commitment may be explained by factors other than organizational strategies, change management practices, and motivation. Participants during the KII also shared that family and community support were important factors in determining nurses' commitment. Further, according to a Chief

Nurse, commitment gained greater importance during the crisis, and factors such as burnout, sense of value, degree of freedom and autonomy, feedback mechanism, patient satisfaction, professional ethics, attitude, and nursing empowerment can be determinants of the nurse's level of commitment. Hence, the null hypothesis (Ho_4), which stated that there is no significant effect of organizational strategies, change management practices, and motivation on nurses' commitment, is rejected. This study significantly affects organizational strategies, change management practices, and motivation on nurses' commitment. In summary, all of the variables showed a significant effect on nurses' commitment. Further, the research was delimited to Sarangani Province and General Santos City hospitals. Organizations such as hospitals face new challenges in creating a committed workforce. However, commitment was ensured with the right organizational strategies, change management practices, and motivational factors.

DISCUSSION

This chapter summarizes the findings on the extent of implementation of organizational strategies, the extent of implementation of change management practices, the level of motivation and commitment of nurses in Sarangani Province and General Santos City, and which variable significantly affects commitment. The findings and recommendations are also presented.

The following were the findings of the study:

In terms of the extent of implementation of organizational strategies, corporate culture got the highest grand mean of 4.43, followed by human resource management practices with a grand mean of 4.22, then goal setting and visioning with a grand mean of 4.18, and lastly, operational excellence at 4.06. All were rated as very highly extensive and highly extensive, respectively, which meant that these measures were detected at a high degree.

This implied that hospitals in Sarangani Province and General Santos City have a dynamic long-term plan and have implemented a sum of actions, strategies, and activities in terms of human resource management and operation and developed a culture towards the realization of the organization's goals. Further, participants during the KII spoke about

leadership frequently in interviews. There were several notations reflective of leadership's impact on organizational strategies. Some participants included statements that the goal of the organization is to be a leader in healthcare, and this was evident in terms of the expressed desires of participants to partake in interviews and continue to learn effective organizational strategies through the results of this study.

In terms of the extent of implementation of change management practices, leadership got the highest grand mean of 4.21, followed by development programs at 4.01, and lastly, communication with a grand mean of 3.57. All measures were detected at a high degree. To sum up, the statistical grand mean for the extent of implementation of change management practices is 3.93, which is interpreted as "highly extensive." This implies that the hospitals promote and implement different approaches, including leadership support, open communication, and development programs, to transition or transform an organization's goals, processes, or technologies.

In terms of the level of motivation, all were rated as very highly extensive and highly extensive, respectively, which means these measures were detected at a high degree. Work environment got the highest grand mean of 4.24, followed by compensation with a grand mean of 3.89, promotion and rewards with a grand mean of 3.88, and resources with a grand mean of 3.76. In summary, data showed that all indicators were being observed extensively, with a grand mean of 3.94. This meant that there was a high degree to which the indicators were being detected. It implied that nurses' motivation is equally important in promoting commitment. Despite some studies supporting the claim that nurses are satisfied with their jobs, migration and turnover rates of nurses are still high. Filipino nurses continuously migrating to other countries have endangered the Philippines' quality of patient care services.

In terms of the level of commitment, career development got the highest grand mean of 4.46 followed by employee engagement with a grand mean of 4.43 and job satisfaction with a grand mean of 4.22. To sum up, the level of commitment, the statistical grand mean was 4.37, which was interpreted as "very highly extensive." It implied that nurses were committed in terms of employee engagement, job satisfaction, and career development. It also showed that leadership behaviors and the role of the management have often been seen as a vital element that influences the level of commitment of employees within the organization to achieve the organizational objectives.

Among the identified variables, organizational strategies (r=0.355) (sig=0.000), change management practices with a correlation value of r = 0.164 (sig.=0.002), and motivation (r=value of .214 (sig.=0.000) showed significant relationships with commitment.

Finally, when loaded together, all independent variables, namely, organizational strategies, change management practices, and motivation with an r-square value gave an amount of 12.5% (p<.005) and significantly affected commitment.

A development program was formulated incorporating organizational strategies, change management practices, and motivation which are the activities that influenced nurses' commitment.

Conclusions

The study's findings led to the following conclusions: Hospital organizations were implementing organizational strategies in terms of goal setting and visioning, human resource management practices, operational excellence, and corporate culture to a high degree. Hospital organizations were executing change management practices in terms of leadership, communication, and development programs to a high degree.

Hospital organizations were promoting programs on motivation in terms of work environment, compensation, promotion and rewards, and resources to a high degree. The level of nurses commitment in terms of employee engagement, job satisfaction and career development was at a high degree. The work of being a nurse or the mission itself appears to be where most of the nurses' commitment comes from. This may explain why nurses still find nursing a fulfilling, rewarding, and satisfying profession.

All identified variables significantly influenced nurses' commitment, namely organizational strategies, change management practices, and motivation. A development program is

formulated to promote and strengthen nurses' commitment in Sarangani Province and General Santos City.

Recommendations

The study's findings revealed significant relationships among organizational strategies, change management practices, and motivation and nurses' commitment.

As a result, the following suggestions were made. Hospital executives may consider strengthening organizational strategy programs focusing on strategic planning and management to address the low relationship between organizational strategies and commitment. Strategic planning of organizations positively affects personnel commitment.

Hospital executives, human resource management officers, and chief nurses shall participate nurses in managerial decision-making, use improved communication skills, and give appreciation for their contributions to the organization. Chief nurses need to include an array of activities in change management practices, such as leadership alignment, holistic communication planning, and organizational development through workshops and seminars to increase the low relationship between change management practices and commitment. Change management that is based on communication and employee participation will enhance employees' commitment to the organization.

Human resource management officers should provide a series of orientation sessions and mentoring programs on the change management process to make nurses aware of new hospital policies and nursing practices. This will provide support and guidance to facilitate a successful transition. Policymakers may consider improving the practice of the factors in motivation, focusing on workplace safety, compensation, promotion, and

rewards and resources. Employees who are motivated and have a positive attitude are more committed.

Hospital executives and human resource management officers shall implement programs through seminar workshops on employee engagement, job satisfaction, and career development to strengthen nurses' commitment.

Nurses shall participate in programs and activities related to strengthening organizational strategies, change management practices, and motivation to ensure commitment. Future researchers may replicate and use the findings of this study as baseline information in exploring other factors that will constitute 87.5% of organizational strategies, change management practices, and motivation. Future researchers may look for and include more variables and domains or aspects of work better to understand the sources of nurses' level of commitment.

A proposed development program was recommended for implementation, which is relevant and timely in addressing the concern about increasing nurses' commitment.

Compliance with Ethical Standards

This study involved respondents employed in DOH-accredited hospitals in Sarangani Province and General Santos City. As respondents were approached, a verbal explanation of the purpose, duration, possible benefits, and burden of participating in the study was provided. All these were detailed on an information sheet. Respondents were advised that the written and signed consent is not a contract. They were made aware that inclusion is voluntary and they are free to withdraw at any time. All respondents' identity and privacy were protected. Anonymity was maintained, and all paper data were destroyed after transferring to a password-protected database that was accessible only to the researcher and the statistician. The research paradigm did not require withholding any information about the study. As the respondents completed the survey questionnaire, they were informed that they could contact the researcher anytime for questions and clarification. Throughout the duration of the study, participants were allowed to request and be provided with ongoing information and final results.

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PAGKATUTO SA FILIPINO GAMIT ANG MODYULAR NA PAG – AARAL AT ONLINE NA PAGSUSULIT SA BAITANG 10 NG MINDANAO STATE UNIVERSITY – SULU LABORATORY HIGH SCHOOL

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ABSTRACT

Ang pagkatuto sa Filipino gamit ang modyular na pag – aaral at online na pagsusulit ay isang pag-aaral na ginawa sa MSU – Sulu Laboratory High School sa taong 2023-2024. Ito ay tumutukoy din sa demograpikong propayl ng mga mag-aaral bilang respondante ayon sa kanilang kasarian, edad, buwanang kita ng mga magulang, at natapos ng mga magulang. Sinuri din nito ang pagkatuto sa Filipino ng mga mag –aaral sa MSU – Sulu Laboratory High ayon sa modyular, online na pagsusulit, at online learning. Sinuri din ng pananaliksik na ito kung may pagkakaiba ayon sa pagkatuto sa Filipino ng mga mag –aaral sa baitang 10 ng MSU – Sulu Laboratory High School, at kung may mahalaga bang pag – uugnayan sa pagkatuto sa Filipino gamit ang modyular, online na pagsusulit, at online learning. Ang pananaliksik ay isang quantitative research at ginanap sa MSU – Sulu Laboratory High School na matatagpuan sa Capitolyo ng Sulu. Ang respondante ng pananakiksik ay ang isang daang estudyante ng paaralan na kinabibilangan ng baitang 10. Purposive sampling ang istratehiyang ginamit sa pagpili ng mga respondante. Ang talatanungan ay nahahati sa dalawang bahagi. Ang unang bahagi ay tungkol sa demograpikong propayl ng mga respondante kabilang na ang kanilang kasarian, edad, natapos nang mga magulang, at buwanan kita ng mga magulang. Ang ikalawang bahagi ay tungkol sa paggamit ng modyular, online na pagsusulit, at online learning sa pagkatuto ng Filipino ng mga mag – aaral. Frequency at percentage ang ginamit na paglalapat ng datos para sa unang katanungan. Mean at standard deviation naman para sa ikalawang katanungan. t – test para sa kasarian at ANOVA para sa ibang demograpikong propayl ang ginamit para sa ikatlong katanungan. Peason Product – Moment Correlation naman ang ginamit para sa ika – apat na tanong. Natuklasan na mas marami ang babae sa bilang ng mga respondante, nasa pagitan ng 19 taong gulang pababa ang edad, karamihan ng mga magulang ay kumikita lamang ng P10,000 pababa kada buwan, at karamihan sa mga magulang ay nakatapos ng pag – aaral. Ang mga

respondante ay sumasang – ayon sa pagkatuto gamit ang modyular, online na pagsusulit, at online learning. Walang mahalagang pagkakaiba ayon sa kasarian, edad, natapos ng mga magulang at buwanang kita ng mga magulang. May katamtamang pag – uugnayan sa pagkatuto sa Filipino gamit ang modyular, online na pagsusulit, at online learning.

Keywords: *Filipino, Modyular, Online na Pagsusulit, Group chat, Google class.*

INTRODUCTION

Ang pagtuturo ay may maraming bahagi at napakakomplikado. Maraming mga ideya, ideya, at mga paraan ang bumubuo sa mahusay na pagtuturo. Gayunpaman, ang mga makabagong diskarte sa pagtuturo ay lumitaw muli bilang resulta ng pandemya na naranasan ng bansa. Ang paggamit ng iba't ibang mga estilo at pamamaraan sa pagtuturo ay lubhang mahalaga para sa epektibong pagkatuto dahil magbibigay-daan ito sa mga mag-aaral na mas malawak at mas bukas ang kanilang isipan. Nagkaroon ng pagtaas ng kaso ng COVID-19 noong 2020. Nakaapekto ito sa edukasyon. Ang edukasyon ay isang uri ng ekonomya na apektuhan kung saan ang tradisyonal na diskarte sa pagtuturo ay hindi ginagamit. Pandemyang ito ay nakakaapekto sa mahigit isang bilyong mag-aaral sa 186 na bansa. Gayunpaman, ayaw ng lahat na matigil ang mga mag-aaral at ang mga guro at iba pang empleyado sa panahong ito dahil sa pag-iingat na madagdagan pa ang mga bayrus para sa kaligtasan ng lahat. Sa panahon ng pandemya, ayon kay Dhawan (2020), ang mga modyul at online na pagsusulit ang pinakamahusay na paraan ng pag-aaral. Ito ay dahil ang pag-aaral sa labas ng silid-aralan at online ay pinakamahusay.

Sabi sa reports, Sa buwan ng enero 2020, mahigit isang daang mga bansa, kasama ang Malaysia, Mongolia, Myanmar, at Thailand, ay naaapektuhan ng “COVID 19” pandemya. Bilang resulta, ang edukasyon sa pilipinas ay nahihirapan makaahon upang makagamit ng teknolohiya sa pagpapatupad ng mga kinakailangan sa edukasyon. Sa mga na aapektuhan, ang paggamit ng online learning ay nagiging mapaminsala dahil karamihan ditto ay hindi sanay. Ang COVID 19 pandemya nagdudulot ng malaking pinsala sa edikasyon.

Ang online na pag-aaral o modyul na pag-aaral ay isang platform kung saan ang mga mag-aaral ay maaaring makipag-ugnayan sa kanilang mga guro at kamag-aral nang personal sa paaralan.

Ang mga mag-aaral ay karaniwang nakakuha ng edukasyon nang personal. Ang pakikipag-ugnayan sa pagitan ng mga guro at mag-aaral ay mahalaga para sa tagumpay ng edukasyon. Dahil tinuturuan ng guro ang mga mag-aaral nang personal, limitado rin ang paggamit ng mga electronic device at internet dito.

Sa kabaligtaran, sinabi ni Cortez (2015) na ang mga pagsusulit na isinagawa online ay maaaring gamitin bilang batayan upang matukoy kung ang mga pagsusulit ay nakabatay sa katotohanan o sa kapaligiran. Si Ambayon (2020) ay nagsabi na ang mga

mag-aaral ay natututo sa kanilang sariling paraan, ayon sa modyul ng pagtuturo at pagkatuto. Ito ay nagbibigay sa mga mag-aaral ng higit pang mga pagkakataon na tumugon sa mga gawain. Ang sapat na pagsasanay ay kailangan para sa mga guro upang magamit ang diskarte sa pagtuturo na ito at ipatupad ito sa klase.

Research Questios

1. Ano ang demograpikong propayl ng mga respondante ayon sa:

    1.1 Edad

    1.2 Kasarian

    1.3 Buwanang kita ng mga magulang

    1.4 Natapos ng mga magulang?

2. Ano ang lawak ng implementasyon ng pagkatuto ng Filipino ng mga mag-aaral ng baitang-10 sa Mindanao State University-Sulu Laboratory High School?

    2.1 Modular;

    2.2 Online na pagsusulit; at

    2.3 Online learning tulad ng group chat,at google class ?

3. Mayroon bang mahalagang pagkakaiba ng lawak ng implementasyon ng gamit ang modyular na pag-aaral at online na pagsusulit ng Baitang -10 sa Mindanao State University Laboratory High School ayon sa kung ang mga Datos ay naayon ukol sa demograpikong propayl,batay sa edad,kasarian,kurso,buwanang kita ng mga magulang,at natapos ng mga magualng?

4. Mayroon bang mahalagang kauugnayan sa pagitan ng mga antas sa Pagkatuto ng Filipino gamit ang modyular at online na pagsusulit sa Baitang -10 ng Mindanao State university-Sulu Laboratory High School?

METHODOLOGY

Research Design

Ang mananaliksik ay gumamit ng paglalarawang pamamaraan o diskriptibong pananaliksik dahil ito ay Isang mabisang paraan sa pag-aaral na ito upang mas makalap ng datos, sinusuri at ipinaliliwanag nito ang estado ng pananaliksik. Ayon kay Gala (2017), ang paglalarawang diskriptibo ay tumutukoy sa pagpapahayag ng impresyon o kakintalang likha ng pandama. Itinatala ng manunulat ang mga detalye batay sa kanyang mga karanasan at naglalayong magbigay ng kabuuang larawan ng isang bagay o pangyayari, o kaya ay magbigay ng isang konseptong biswal ng mga bagay, pook, tao, o pangyayari.

Research Locale

Ang mananaliksik ay nagpokus sa pagkalap ng datos mula sa isang daang (100) opisyal na mag-aaral ng Mindanao State University-Sulu Laboratory High School sa Baitang-10 ayon sa iba't-ibang pangkat tulad ng Venus, Saturn, Mercury, at Mars, ang pagkalap ng mga Datos ay naisakatuparan sa pamamagitan ng pamamahagi ng talatanungan sa mga respondante.

Respondents of the Study

Distribusyon Ng Talatanungan Sa Mga Respondante

Mindanao State University-Sulu Laboratory High School	Mag-aaral na Respondante
Mag-aaral sa Baitang-10 nasa bawat pangkat tulad ng Venus, Saturn, Mercury, at Mars.	100
Kabuuan	100

Sampling Procedure

Ang mga mag-aaral ay pinili sa pamamagitan ng purposive sampling at ang pagkategoriya ng mga respondante ay gagamitan ng estratehiyang sampling.

Data Gathering Procedure

Ang talatanungan o survey ay nahahati sa dalawang bahagi. Ang una ay pagkalap ng personal na datos ayon sa edad, kasarian, kurso, natapos ng mga magulang at buwanang kita ng mga magulang,at ang ikalawang bahagi ay nakapokus sa pananaw at opinyon ng mga respondante ukol sa mga tatlong kategorya o Modelo ng Pagkatuto sa Filipino tulad ng modyular na pag-aaral,online na pagsusulit at GC /google class na pag-aaral.

Research Intsrument

Ang pangunahing instrumentong gimitin sa pananaliksik ay ang talatanungan. Ito ay nilikha ng mananaliksik mula sa iba't-ibang survey na ginamit sa parehong pag-aaral tulad ng teacher-student Relationship Questionnaire (TSRQ) Rating Scale:survey na ayon kay Edna Anonuevo (2018)

Ang nagsagawa ng pag-aaral, pamamahagi ng talatanungan sa mga mag-aaral ginawa ng may pahintulut sa kanselor ng Mindanao State University-Sulu Laboratory High School.

Statistical Treatment of Data

Ang mga nakalap na datos ay tinala, inihanay, isa-isang sinuri at pinatunayan.

1. Upang sagutin ang unang tanong sa suliranin na nagsasaad:"Ano ang Demograpikong propayl g mga respondante ayon sa edad, kasarian, kurso, natapos ng mga magulang,buwanang kita ng mga magulang? Gagamitin ang frequency count at percentage.

2. Sagutin ang ikalawang tanong sa suliranin na nagsasaad: Ano ang lawak implementasyon ng Pagkatuto ng Filipino gamit ang modyular na pag-aaral at modyular at online na pagsusulit sa Baitang-10 ng Mindanao State University-Sulu Laboratory High School, Sa kung ang mga datos ay naayon ukol sa demograpikong propayl ayon sa edad, kasarian, natapos ng mga magulang gagamitin at buwanang kita ng mga magulang at buwanang kita ng mga magulang?,"t-test for independent variable sample at one-way ANOVA ang gagamitin.

3. Upang sagutin ang ikatlong tanong: Mapagtanto ang pagkakaiba at lawak ng implementasyon ng pagkatuto ng Filipino gamit ang modyular nap ag-aaral at online na pagsusulit sa baiting 10 ng Mindanao State University-Sulu Laboratory High School ukol sa demograpikong propayl, edad, kasarian, buwanang kita ng maga magulang. Pearson product Moment Correlation Coefficient (Pearson r) test for independent variable samples at one-way ANOVA din ang gagamitin.

4. Upang sagutin ang ikaapat na tanong:"Mayroon bang mahalagang kaugnayan sa pagitan ng mga antas ng Pagkatuto sa Filipino gamit ang modyular na pag-aaral at online na pagsusulit sa Baitang-10 ng Mindanao State University-Sulu Laboratory High School? ay Pearson product Moment Correlation Coefficient (Pearson r) test for independent variable samples at one-way ANOVA din ang gagamitin.

Punto	Sukatan	Paglalarawan
5	4.50-5.00	Mantinding Pagsang-ayon
4	3.50-4.49	Sumasang-ayon
3	2.50-3.49	Walang pasya
2	1.50-2.45	Tumututol
1	1.00-1.49	Matinding pagtutol

RESULTS AND DISCUSSION

1. Ano ang demograpikong propayl ng mga respondante ayon sa; 1.1 kasarian; 1.2 edad, 1.3 buwanang kita ng mga magulang, at 1.4 natapos ng mga magulang?

Ang talaan 1.1 ay tungkol sa demograpikong propayl ayon sa kasarian. Makikita sa talaan na 57% ng mga respondante ay mga babae at 43% ay mga lalaki. Ang resulta ay nagpapahiwatig na mas lamang ang dami ng mga estudyanteng babae kesa mga lalaki sa ika – sampung baitang ng MSU – Sulu Laboratory High School.

Talaan 1.1 Demograpikong Propayl ayon sa Kasarian

Kasarian	Frequency	Porsyento
Babae	57	57%
Lalaki	43	43%
KABUUAN	100	100%

Ang talaan 1.2 ay tungkol sa demograpikong propayl ayon sa edad makikita sa talaan na 97% ng mga respondante ay 19 taog gulang pababa ang edad at 3% lamang ang 20 taong gulang.

Ang resulta ay nagpapahiwatig na karamihan sa mga mag – aaral sa ika – sampung baitang ng MSU – Sulu Laboratory High School ay nasa tamang edad lamang sa kanilang kasalukuyang baitang.

Talaan 1.2 Demograpikong Propayl ayon sa Edad

Edad	Frequency	Porsyento
19 taong gulang pababa	97	97%
20 taong gulang	3	3%
21 taong gulang pataas	0	0%
KABUUAN	100	100%

Ang talaan 1.3 ay tungkol sa demograpikong propayl ng mga mag – aaral sa ika – sampung baitang ng MSU – Sulu Laboratory High School ayon sa buwanang kita ng mga magulang.

Makikita sa talaan na 49% ng mga magulang ay kumikita g P10,000 pababa kada buwan at 15% lamang ang kumikita ng P25,001 pataas.

Ang resulta ay nagpapahiwatig na halos kalahati ng mga magulang ay mababa ang kinikita kaysa minimum para masabing sila ay maalwan sa buhay.

Talaan 1.3 Demograpikong Propayl ayon sa Buwanang Kita ng mga Magulang

Buwanang Kita	Frequency	Porsyento
P10,000 pababa	49	49%
P10,001 – 15, 000	15	15%
P15,001 – 25,000	21	21%
P25,001 pataas	15	15%
KABUUAN	100	100%

Ang talaan 1.4 ay tungkol sa demograpikong propayl ng mga mag – aaral sa ika – sampung baitang ng MSU – Sulu Laboratory High School ayon sa natapos ng mga magulang.

Makikita sa talaan na 83% ng mga magulang ay nakatapos ng kolehiyo at 2% lamang ang hindi nakapag – aral.

Ang resulta ay nagpapahiwatig na edukado ang karamihan sa mga magulang ng mga mag – aaral sa ika – sampung baitang ng MSU – Sulu Laboratory High School.

Talaan 1.4 Demograpikong ayon sa Natapos ng mga Magulang

Natapos ng Magulang	Frequency	Porsyento
Elementarya	5	5%
Mataas na Paaralan	10	10%
Tapos ng Kolehiyo	83	83%
Walang Pinag - Aralan	2	2%
KABUUAN	100	100%

2. Ano ang kabuluhang pagkatuto ng Filipino ng mga mag – aaral ng baitang 10 sa MSU – Sulu Laboratory High School ayon sa; 2.1 modyular, 2.2 online na pagsusulit, at 2.3 online learning tulad ng group chat at google class?

Ang talaan 2.1 ay tungkol sa kabuluhang pagkatuto ng Filipino ng mga mag – aaral ng 10 baitang ng MSU – Sulu Laboratory High School ayon sa modyular.

Makikita sa talaan na ang mga respondante ay nagpahiwatig na sila ay ***sumasang – ayon*** o di kaya ay ***walang pasya*** sa mga pahayag ukol sa kabuluhang pagkatuto ng Filipino ayon sa modyular. Ilan sa mga pahayag kung saan sila ay **sumasang – ayon** ay; nasisiyahan sa pagsulong ng pamahalaan sa modyular sa dulog sa pagtuturo sa panahon ng pandemya nang sa ganoon ay nakapagpatuloy sa pag – aaral nang may buong ekis (mean = 4.440, SD = .499) at nagagalak sa ginamit ng modyular na pag – aaral sa Filipino bukod sa online class nang sa ganoon ay matugunan ang pagkatuto kahit kulang sa mga gadyet at internet (mean = 4.390, SD = .723). Para sa mga pahayag na ***walang pasya***

ay; nasisiyahan sa nilalaman ng modyular na angkop sa kakayahan at madaling nasasagot ang mga katanungan kahit walang mapagtanungan na mga kamag – aral at guro (mean = 3.200, SD = 1.110); at ang online exam ay nagpapadali o nagpapagaan ng mga iba pang gawain (mean = 2.810, SD = 1.034). Ang kabuuan na 3.675 ay nangangahulugan na ang mga respondante ay ***sumasang ayon*** sa mga pahayag ukol sa kabuluhang pagkatuto ng Filipino ng mga mag – aaral ng 10 baitang ng MSU – Sulu Laboratory High School ayon sa modyular.

Talaan 2.1 Makabuluhang Pagkatuto ng Filipino ayon sa Modyular

Modyular	Mean	SD	Interpretasyon
1. Nasisiyahan sa pagsulong ng pamahalaan sa modyular sa dulog sa pagtuturo sa panahon ng pandemya nang sa ganoon ay nakapagpatuloy sa pag – aaral nang may buong ekis.	4.440	.499	Sumasang - ayon
2. Nagagalak sa ginamit ng modyular na pag – aaral sa Filipino bukod sa online class nang sa ganoon ay matugunan ang pagkatuto kahit kulang sa mga gadyet at internet.	4.390	.723	Sumasang - ayon
3. Nahihimok na mapaunlad ang mga kakayahan na magawa ang tagubilin ng guro.	3.580	1.007	Sumasang - ayon
4. Nasisiyahan sa nilalaman ng modyular na angkop sa kakayahan at madaling nasasagot ang mga katanungan kahit walang mapagtanungan na mga kamag – aral at guro.	3.200	1.110	Walang Pasya
5. Nagaganahan sa mga konstekstwalisado at pinasimpleng gawain sa modyul lalo na sa panitikan, gramatika, at usaping pangwika na nagagamit sa totoong buhay.	3.760	1.111	Sumasang - ayon
6. Ang online exam ay nagpapadali o nagpapagaan ng mga iba pang gawain.	2.810	1.034	Walang Pasya
7. Ang online exam ay madaling gamitin at mabilis itong tapusin dahil sa mayroon itong itinakdang oras.	3.400	.910	Walang Pasya
8. Ang mga mag – aaral ay kinakailangang matutunan ang paggamit ng computer para sa online exam.	4.350	.557	Sumasang - ayon
9. Ang online exam ay may ganap na kawastuhan pagdating sa mga tanong na sasagutan ng mga mag –aaral.	3.690	.884	Sumasang - ayon
10. Ang online exam ay magagamit lamang ng mga lihitimong mag – aaral ng nasabing paaralan.	3.510	1.176	Sumasang - ayon

11. Ang online exam ay mainam upang mapaikli ang oras at panahon sa paggawa ng pagsusulit.	3.300	.461	Walang Pasya
KABUUAN	**3.675**		**SUMASANG - AYON**

Leyenda: 5 (4.50 – 5.00) – Matinding Pagsang-ayon, 4 (3.50 – 4.49) – Sumasang- ayon
3 (2.50 – 3.49) - Walang Pasya, 2 (1.50 – 2.49) – Tumututol,
1 (1.00 – 1.49)– Matinding Pagtutol

Ang talaan 2.2 ay tungkol sa kabuluhang pagkatuto ng Filipino ng mga mag – aaral ng 10 baitang ng MSU – Sulu Laboratory High School ayon sa online na pagsusulit.

Makikita sa talaan na ang mga respondante ay nagpahiwatig na sila ay ***sumasang – ayon*** sa halos lahat ng mga pahayag ukol sa online na pagsusulit at ilan sa mga ito ay; nakagiginhawa ang pagtulong ng local na pamahalaan sa pamamahagi ng mga modyul sa mga bahay – bahay (mga local at barangay opisyal kasama na ang mga stakeholder) (mean = 4.200, SD = .791); at nasasabik sapagkat ang wikang ginagamit sa mga modyul sa Filipino ay simple at madaling maintindihan (mean = 4.130, SD = 1.012). Ngunit, sila ay ***walang pasya*** sa isang pahayag lamang at ito ay tungkol sa; ang online exam ay komprehensibo ayon sa lebel ng kaalaman ng isang mag – aaral (mean = 2.630, SD = .971).

Ang kabuuan na 3.816 ay nangangahulugan na ang mga respondante ay ***sumasang – ayon*** sa mga pahayag tungkol sa kabuluhang pagkatuto ng Filipino ng mga mag – aaral ng 10 baitang ng MSU – Sulu Laboratory High School ayon sa online na pagsusulit.

Talaan 2.2 Makabuluhang Pagkatuto ng Filipino ayon sa Online na Pagsusulit

Online na Pagsusulit	Mean	SD	Interpretasyon
1. Nahihikayat sa pagsagot sa tulong ng mga ilustrasyon at mga grapiks sa modyul sa Filipino na mas nagiging simple at kapana – panabik na mg gawain sa pagkatuto.	4.070	.714	Sumasang – ayon
2. Nasasabik sapagkat ang wikang ginagamit sa mga modyul sa Filipino ay simple at madaling maintindihan.	4.130	1.012	Sumasang – ayon
3. Nahihirapan sa paghingi ng tulong mula sa mga magulang sa pagsagot sa mga gawain sa modyul dahil sa kanilang trabaho.	3.690	1.354	Sumasang – ayon

4. Nasisiyahan sa ibinigay na gabay ng guro sa Filipino na maisakatuparan ang mga layunin sa pagkatuto sa bawat leksyon sa modyul sa Filipino.	3.640	1.124	Sumasang – ayon
5. Nakaluluwag ng damdamin ang pamamaraang ginawa ng gobyerno na makaiwas sa pandemya ang aking mga magulang sa pagkuha at paghatid ng mga modyul sa paaralan.	4.170	1.155	Sumasang – ayon
6. Nakagiginhawa ang pagtulong ng local na pamahalaan sa pamamahagi ng mga modyul sa mga bahay – bahay (mga local at barangay opisyal kasama na ang mga stakeholder).	4.200	.791	Sumasang – ayon
7. Ang online exam ay nagpapadali o nagpapagaan ng iba pang mga gawain.	4.130	.971	Sumasang – ayon
8. Ang online exam ay mabilis gamitin at madaling maunawaan.	3.680	.764	Sumasang – ayon
9. Ang online exam ay komprehensibo ayon sa lebel ng kaalaman ng isang mag – aaral.	2.630	.971	Walang Pasya
KABUUAN	**3.816**		**SUMASANG - AYON**

Leyenda: 5 (4.50 – 5.00) – Matinding Pagsang-ayon, 4 (3.50 – 4.49) – Sumasang- ayon
3 (2.50 – 3.49) - Walang Pasya, 2 (1.50 – 2.49) – Tumututol,
1 (1.00 – 1.49)– Matinding Pagtutol

Ang talaan 2.3 ay tungkol sa kabuluhang pagkatuto ng Filipino ng mga mag – aaral ng 10 baitang ng MSU – Sulu Laboratory High School ayon sa online learning na tulad ng group chat at google class.

Makikita sa talaan na ang mga respondante ay nagpahiwatig na sila ay ***sumasang – ayon*** sa karamihan ng mga pahayag ukol sa online learning. Ilan sa mga pahayag kung saan sila ay ***sumasang – ayon*** ay; nagagalak sa guro na lagging masasandalan kung ako ay may katanungan hinggil sa pagsagot sa modyul sa Filipino sa pagtext, pagtawag, at iba pa (mean = 4.220, SD = .719); at ang online exam ay epektibo sa kasalukuyang panahon dahil sa teknolohiya (mean = 4.060, SD = .679). Ngunit sila ay may ***matinding pagsang - ayon*** o natutuwa sa guro sa Filipino na laging nagtatanong sa kalagayan ng mga mag – aaral kaugnay sa pagkatuto ng mga aralin sa modyul (mean = 4.740, SD = .463).

Ang kabuuan na 3.693 ay nangangahulugan na ang mga respondante ay ***sumasang – ayon*** sa mga pahayag ukol sa kabuluhang pagkatuto ng Filipino ng mga mag – aaral ng 10 baitang ng MSU – Sulu Laboratory High School ayon sa online learning na tulad ng group chat at google class.

Talaan 2.3 Makabuluhang Pagkatuto ng Filipino ayon sa Online Learning Tulad ng Group Chat at Google Class

Online Learning	Mean	SD	Interpretasyon
1. Nasisiyahan sa modyular na nahahati sa mga yugto tulad ng mga kasanayang aklat na nakasanayan ng gamitin.	3.850	.809	Sumasang - ayon
2. Natutuwa sa pagsunod sa mga malinaw na panulong ibinigay ng modyul na Filipino sa tulong ng weekly plan.	3.500	.772	Sumasang - ayon
3. Nagustuhan ang mga biswal na mga ilustrasyon at grapiks na makikita sa mga modyul na tulad ng mga larawan at mga kaugnay nito.	3.670	1.311	Sumasang - ayon
4. Gumagamit lang ako ng cellphone sa mga importanteng pangangailangan para makatipid sa budget.	3.530	1.507	Sumasang - ayon
5.Nagagalak sa guro na lagging masasandalan kung ako ay may katanungan hinggil sa pagsagot sa modyul sa Filipino sa pagtext, pagtawag, at iba pa.	4.220	.719	Sumasang - ayon
6. Nalulugod sa guro sa Filipino na nagbibigay ng mga positibong marka sa mga gawain sa modyul na lalong nagpapasidhi sa layuning matuto kahit hindi nagkikita.	3.430	1.200	Walang Pasya
7. Natutuwa sa guro sa Filipino na laging nagtatanong sa kalagayan ng mga mag – aaral kaugnay sa pagkatuto ng mga aralin sa modyul.	4.740	.463	Matinding Pagsang - ayon
8. Ang online exam ay may panuto na nagsasaad ng mga gawain.	3.500	.772	Sumasang - ayon
9. Ang online ay praktikal sapagkat makakatipid dito, kung ihahambing sa prodyus ng mga papel nito.	3.130	.367	Walang Pasya
10. Kung minsan nahihirapan ako sa pagsagot dahil may kahinaan ang signal.	4.000	1.271	Sumasang - ayon
11. Kadalasan nanghihiram ako ng cellphone sa mga kaibigan ko o kapatid ko na nagiging sanhi sa pagkahuli sa pagpasa ng aking online exam.	2.680	1.034	Walang Pasya

12. Ang online exam ay epektibo sa kasalukuyang panahon dahil sa teknolohiya.	4.060	.679	Sumasang - ayon
KABUUAN	**3.693**		**SUMASANG – AYON**

Leyenda: 5 (4.50 – 5.00) – Matinding Pagsang-ayon, 4 (3.50 – 4.49) – Sumasang- ayon
3 (2.50 – 3.49) - Walang Pasya, 2 (1.50 – 2.49) – Tumututol,
1 (1.00 – 1.49)– Matinding Pagtutol

3. Mayroon bang mahalagang pagkakaiba sa lawak ng implementasyon na gamit ang modyular sa pag – aaral at online na pagsusulit ng baitang 10 ng MSU – Sulu Laboratory High School ayon sa kung ang mga datos ay naayon sa demograpikong propayl batay sa edad, kasarian, buwanang kita ng mga magulang, at natapos ng mga magulang?

Ang t- test ay ginamit para sa pagkakaiba sa lawak ng implementasyon na gamit ang modyular sa pag – aaral at online na pagsusulit ng baitang 10 ng MSU – Sulu Laboratory High School ayon sa kung ang mga datos ay naayon sa demograpikong propayl batay sa kasarian.

Ang sig. value na 0.304 para sa modyular ay mas mataas kesa lebel na .05, ang sig. value na 0.263 para sa online na pagsusulit ay mas mataas kesa lebel na .05, at ang sig. value na 0.244 naman ay mas mataas kesa lebel na .05. Ibig sabihin nito ay tinatanggap ang negatibong hipotesis na walang mahalagang pagkakaiba sa lawak ng implementasyon na gamit ang modyular sa pag – aaral at online na pagsusulit ng baitang 10 ng MSU – Sulu Laboratory High School ayon sa kung ang mga datos ay naayon sa demograpikong propayl batay sa kasarian.

Ito ay nagpapahiwatig na walang basehan upang makita na ang kasarian ay may kaibahan sa lawak ng implementasyon na gamit ang modyular sa pag – aaral at online na pagsusulit.

Talaan 3.1 t – test para sa mahalagang pagkakaiba sa lawak ng implementasyon na gamit ang modyular sa pag – aaral at online na pagsusulit ng baitang 10 ng MSU – Sulu Laboratory High School ayon sa kung ang mga datos ay naayon sa demograpikong propayl batay sa kasarian

Variables	Grouping	Mean	SD	Mean Diff.	t	Sig.	Description
	Lalaki	4.750	1.085				Walang

Modyular	Babae	4.570	1.125	0.180	28.528	.304	Pagkakaiba
Online na Pagsusulit	Lalaki	4.940	1.023				Walang Pagkakaiba
	Babae	4.420	1.150	0.520	27.550	.263	
	Lalaki	4.650	1.330				Walang Pagkakaiba
Online Learning	Babae	4.220	1.250	0.430	28.650	.244	

Significant at .05 level

Talaan 3.2 Analysis of Variance (ANOVA) ang ginamit para sa edad, buwanang kita ng mga magulang, at natapos ng mga magulang.

Ang sig. value na 0.966 para sa edad ay mas mataas kesa lebel na .05 at ang sig. value na 0.584 para sa buwanang kita ng mga magulang ay mas mataas kesa lebel na .05, at ang sig. value naman na 0.688 para sa natapos ng mga magulang ay mas mataas kesa lebel na .05.

Ang ibig sabihin ay tinatanggap ang negatibong haypotesis pamamagitan ng edad, buwanang kita ng mga magulang, at natapos ng mga magulang.

Ang resulta ay nagpapahiwatig na walang mahalagang pagkakaiba sa lawak ng implementasyon na gamit ang modyular sa pag – aaral at online na pagsusulit ng baitang 10 ng MSU – Sulu Laboratory High School ayon sa kung ang mga datos ay naayon sa demograpikong propayl batay sa edad, buwanang kita ng mga magulang, at natapos ng mga magulang.

Talaan 3.2 ANOVA para sa mahalagang pagkakaiba sa lawak ng implementasyon na gamit ang modyular sa pag – aaral at online na pagsusulit ng baiting 10 ng MSU – Sulu Laboratory High School ayon sa kung ang mga datos ay naayon sa demograpikong propayl batay sa edad, buwanang kita ng mga magulang, at natapos ng mga magulang

		Sum of Square	df	Mean Square	f	Sig.	Interpretasyon
Edad							
	Between Groups	.068	2	0.034	0.135	0.966	Walang Pagkakaiba
	Within Groups	24.376	97	0.251			
	Total	24.444	99				
Buwanang Kita ng mga Magulang							
	Between Groups	.494	3	0.165	0.651	.584	Walang Pagkakaiba
	Within Groups	23.042	96	0.253			
	Total	23.537	99				
Natapos ng mga Magulang							
	Between Groups	0.376	3	0.125	0.493	.688	Walang Pagkakaiba
	Within Groups	23.869	96	0.254			
	Total	24.245	99				

Significant at .05 level

4. Mayroon bang mahalagang pag – uugnay sa pagitan ng mga antas sa pagkatuto ng Filipino gamit ang modyular at online na pagsusulit sa baitang – 10 ng MSU – Sulu Laboratory High School?

Ang talaan 4 ay tungkol sa mahalagang pag – uugnayan sa pagitan ng mga antas ng pagkatuto ng Filipino gamit ang modyular at online na pagsudulit sa baitang 10 ng MSU – Sulu Laboratoty High School.

Makikita sa talaan na ***katamtaman na kaugnayan*** lamang ang pag – uugnay sa antas ng pagkatuto gamit ang modyular (r = .451), ***katamtaman na kaugnayan*** sa online na pagsusulit (r = 0.368), at ***katamtaman na kaugnayan*** sa online learning (r = 0.402).

Ang resulta ay nagpapahiwatig na hindi masyadong mataas ang kaugnayan ng modyular, online na pagsusulit, at online learning sa pagkatuto ng Filipino ng baiting 10 ng MSU – Sulu Laboratoty High School.

Talaan 4. Mahalagang Pag – uugnay sa Pagitan ng mga Antas ng Pagkatuto ng Filipino Gamit ang Modyular at Online na Pagsusulit sa Baitang 10 ng MSU – Sulu Laboratory High School

		Pearson r	Sig.	n	Deskripsyon
Modyular	Online Pagsusulit	0.387	.000	100	Katamtaman
	Online Learning	0.514	.000	100	Mataas
	Kabuuan	**0.451**			**KATAMTAMAN**
Online na Pagsusulit	Modyular	0.395	.000	100	Katamtaman
	Online Learning	0.340	.000	100	Katamtaman
	Kabuuan	**0.368**			**KATAMTAMAN**
Online Learning	Modyular	0.522	.000	100	Mataas
	Online Pagsusulit	0.282	.000	100	Mababa
	Kabuuan	**0.402**			**KATAMTAMAN**

*Correlation Coefficient is significant at £ = .05

Correlation Scales adapted from Hopkins (2002):
0.0– 0.1 = Nearly Zero (halos wala); 0.1 – 0.3 = Low (mababa);
0.3 – 0.5 = Moderate (katamtaman); 0.5 – 0.7 = High (mataas);
0.7 – 0.9 = Very High (napakataas); 0.9 – 1.0 = Nearly Perfect (halos perpekto)

Konklusyon

Ang mga sumusunod na konklusyon ay naayon sa natuklasan ng pananaliksik:

Ang mga mag – aaral ng ika – sampung baitang ng MSU – Sulu Laboratory High School ay karamihan ay babae, nasa tamang edad para sa kanilang kasalukuyang grado, mababa ang kinikita kada buwan ng mga magulang, at karamihan ay edukado.

Ang mga respondante ay hindi masyadong kumbinsido sa kahalagahan ng kabuluhang pagkatuto ng Filipino ng kanilang leksyon sa pamamagitan ng modyular, online na pagsusulit, at online learning ng baitang 10 ng MSU – Sulu Laboratory High School.

Ang kawalan ng pagkakaiba sa lawak ng implementasyon na gamit ang modyular sa pag –aaral at online na pagsusulit ng baitang 10 ng MSU – Sulu Laboratory High School ayon sa kung ang mga datos ay naayon sa demograpikong propayl batay sakasarian, edad, buwanangkita ng mga magulang, at natapos ng mga magulang ay nangangahulugan na ang propayl ay hindi maipapakita ang kaibahan ng lawak ng implementasyon na gamit ang modyular sa pag – aaral, online na pagsusulit, at online learning.

Ang katamtamang pag – uugnayan sa pagitan ng mga sub – kategorya ng pagkatuto ng Filipino gamit ang modyular, online na pagsusulit, at online learning sa baitang 10 ng MSU – Sulu Laboratoty High School ay nangangangahulugang ang pagkatuto sa kanilang leksyon aynakabatay pa rin sa kagustuhan ng isang mag – aaral na matuto.

Rekomendasyon

Ang mga sumusunod ay inirerekomenda ayon sa natuklasan sa pananaliksik:

1. Maaaring maging masigasig sa pag – aaral ng kanilang leksiyon ang mga estudyante kahit sa anumang paraan ng pagkatuto.

2. Mas mainam pa rin ang harapang pagtuturo kesa sa paraan ng pagtuturo noong pandemya kasi naipapaliwanang ng isang guro ng maigi ang mga aralin.

3. Maaaring maging mapanuri ang mga magulang sa mga aralin ng kanilang mga anak upang sila ay magabayan ng tama at hindi nagsasayang ng oras.

4. Ang mga estudyante ay dapat na mag – aral ng husto at determinadong matuto sa kahit anu mang paraan ng pagtuturo.

5. Maaaring gawin ng isang guro ang lahat ng paraan para sa pagkatuto ng mga estudyante sa kanilang mga aralin.

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Kay **Prof. MASNONA SABDANI – ASIRI, DPA** Dekana ng Paaralang Panggradwado at nagsilbing Chairman of the panel sa pagsulat ng pananaliksik na ito.maraming salamat sa pagbabahagi ng kaalaman batay sa pagsulat ng pananaliksik na ito at pag gabay na matapos at maisasakatuparan ang lahat na ito.

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Compliance with Ethical Standards

Siniguro ang pagsasagawa ng pananaliksik ay susunod sa mga panuntunan at pamantayan. Nagbigay ang mananaliksik ng informed consent sa isinagawang pagaaral para sa mga kalahok para mabasa at mapag-aralan.

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PAGTUGON SA KAHALAGAHAN SA PAGSASALIN SA FILIPINO NG KWENTONG BAYAN SA BAHASA SUG NG MAG-AARAL SA IKASAMPUNG BAITANG NG JOLO NATIONAL HIGH SCHOOL

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ABSTRACT

Ang pananaliksik na ito ay ukol sa “Pagtugon sa Kahalagahan sa Pagsasalin sa Filipino ng Kwentong Bayan sa Bahasa Sug ng mga Mag-aaral sa Ikasampung Baitang ng Jolo National High School”. Nilalayon nitong maisalin sa wikang Filipino ang tatlong kwenton-bayan ng Tau’sug, matutrukoy ang mgs sumusunod na aspetong nakapaloob sa kwentong-bayan ng Tau’sug gaya ng kaugalian, paniniwala, halagang pangkatauhan, at maiugnay ang panitikang tau’sug sa panitikang tagalogsa kanilang kaligiran. Ginagamit ang diskriptibong pag-aaral o method bilang disenyo ng pananaliksik. Talatanungan ang ginagamit na instrument sa pangangalap ng datos.Ginagamit naman ang andom sampling sa pagpili ng mga 100 respondante sa Ikasampung Baitang ng Jolo National High School na saklaw ng pag-aaral na ito para mabigyan ng pagkakataon ang mga mag-aaral na sumagot sa mga natalang katanungan ng pananaliksik. Sa estadistikang gamit, ginagamit ito ng deskriptibong estadistika katulad ng frequency / dalas at porsyento sa pag-aanalisa ng propayl ng mga respondante. Mean at Standard Deviation naman ang ginamit sa pag-aanalisa sa tatlong suliranin. Nararapat lamang matunghayan at malaman ng mga salinlahi ang kwentong bayan ng mga tau’sug upang mapanatiling buhay ang panitikang Tau’sug.

Keywords: *Pagsasalin, Filipino, Kwentong Bayan, Bahasa Sug, JNHS*

INTRODUCTION

Ang pagkakaroon ng sariling pagkakakilan ay iniingatan at ipinagmamalaki ng bawat lahi saan mang dako ng daigdig. Sa kabila ng pagsulong ng agham kasabay ang pakikibagay ng sangkatauhan sa pagbabago ng panahon, iniingatan pa rin ng mga katutubo ang kanilang namanang tradisyon at kultura. Matagal-tagal na ring pinagsisikapan ng National Commission for Culture and The Arts (NCCA) ang pagkalap ng mga akdang pampanitikan ng iba't ibang tribo sa bansa na matatawag na "Tunay na Panitikan ng Pilipinas". Kapansin-pansin din na karamihan ng mga akdang natipon sa kaban ng ating panitikan ay yaong mga panitikan lamang ng nangungunang tribo sa ating bansa. Malinaw na nakasaad sa 1987 Saligang batas, Artikulo XV, Seksyon 9 at ikalawang bahagi ng Seksyon 11, na ang kulturang Pilipino ay kailangang pangalagaan at paunlarin para sa mga salinlahing darating. Ang sining at panitikan ay kailangang isailalim sa pagtangkilik ng estado. Dapat isaalang-alang ang tradisyon, simulain at interes ng pambansang katutubong nabibilang sa minoridad sa pagbabalangkas at pagtatag ng mga patakaran ng estado. Upang matupad ang hinihingi ng saligang batas, minabuti ng mananaliksik na isalin sa Filipino ang mga akdang nasulat sa wikang Tau'sug sa Jolo, Sulu.

Bago pa man dumating ang mga mananakop na kastila, ang mga katutubong etniko ng Jolo, Sulu, ang Tau'sug mayroon nang maituturing na sariling panitikang nagpakita at nagpapakilala ng kanilang sariling identidad ng kanilang kalinangan at kasaysayan.Dito, may sariling sistema ng pagsulat o baybayin sa madaling sabi/salita tinatawag nila bahasa sug.

Ang mga Tau'sug sa pamamagitan nang kanilang makulay na panitikan naitala ng mga nakatatanda sa pasalinsalin sa mga henerasyon sa kasalukuyan ang kanilang banal na pananampalataya kay Allah, kanilang tradisyon, kaugalian, paniniwala at iba pa.

Ipinahayag ni Santiago (1994) na unang nasilayan ng Pilipinas ang pagsasaling-wika noong pananakop ng mga kastila sa layunin mapalaganap ang kristiyanismo. Isinalin ng mga misyonero sa Tagalog at iba pang pangunahing wika ang katestimo, mga akdang panrelihiyon, mga dasal at iba pang akdang nakasulat sa kastila upang mapabilis ang pagpapalaganap ng Iglescia Catolica Romano. Sa ganitong paraan lamang maipadama at maipababatid sa mga katutubo ang kahalagahan ng relihiyon.

Inilahad sa bahaging ito ang mga teoriya tungkol sa pagsasalin na nakatulong sa mananaliksik upang mabuo ang konseptong naging batayan ng ginagawang pag- aaral.

Ayon kay Alejandro (1972), ang pagsasalin ay hindi nagbibigay-diin sa salita kundi sa diwa-sa-diwa. Tungkulin daw ng tagasalin ang puspusang unawain ang kahulugan ng salita. Kailangan ring matutong sumangguni sa diksyunaryo ang tagasalin at sa mga katutubong nagsasalita sa wikang ginagamit sa orihinal na teksto.

Ang pahayag na ito ay mahirap gampanan ng isang tagasalin dahil hindi mapaparisan ng tagasalin ng 100% ang istilo ng may-akda. Ang kanyang salin ay makukulayan ng kanyang sariling istilo at maaaring maiaayon niya sa kanyang panahong kinabibilangan at sa target na mambabasa ng kanyang salin.

Binanggit ni Nida, et al (1964) na ang isang tagapagsalin ay kailangang mag-angkin ng sapat na kaalaman sa wikang isasalin gayundin ang wikang pagsasalinan. Hindi kailangang makuha lamang ang kahulugan ng salita sa diksyunaryo kundi ang diwa rin ng akdang isasalin. Isa pa, kailangan ding pag-aralan ang kultura ng taong gumagamit dito. Nagbanggit si Nida ng siyam na hakbanging dapat sundin kung nagsasalin: (1) pagbasa ng buong teksto, (2) pagkaroon ng kabatiran tungkol sa pinagmulan ng teksto, (3) paghahambing ng dalawang teksto, ang isinalin at ang salin, (4) paggawa ng unang burador, (5) pagrerebisaginawang burador pagkatapos ng ilang araw, (6) pagbasa nang malakas upang makuha ang tamang istilo at porma ng teksto, (7) pagpapabigay ng reaksyon sa mga makikinig sa salin (receptor) at ang pagpapatotoo nito sa kaangkupan ng salin/balidasyon (validity] ng salin, (8) pagwawasto at pagrerebisa ng iba pang bumasang tagasalin, (9) pagrerebisa muli sa teksto para sa paglimbag.

Ayon naman kay Santiago (1994), imposibleng maisaling ganap sa ibang wika ang sinulat ng awtor sa isang wika sapagkat naisalin man at hindi ng tagapagsalin ay tiyak na may nawawala, nababago, o nadaragdag sa orihinal na diwa ng kanyang isinalin.

Idinagdag pa ni Santiago na karaniwan nang paniniwala na ang isang salin ay huwad lamang at hindi maaaring ipantay sa orihinal. Bihira ang nakakaunawa na mas mahirap ang magsalin kaysa sa lumikha. Isipin ng manunulat ay malaya samantalang ang pagsasalin ng tagapagsalin ay “nakatali" o nakagapos sa orihinal na ideya ng manunulat - walang kalayaan. Sa katotohanan aniya, higit na maraming katangian ang dapat angkinin ng isang tagapagsalin kaysa isang manunulat. Tungkulin ng isang tagapagsalin ang malipat niya sa wikang kanyang pagsasalinan ang diwang ipinahahayag sa wikang isinasalin. At upang maging maayos ang kanyang pagsasalin, dapat din niyang unawain hindi lamang ang nakikitang nilalaman ng paksa gayundin ang natatagong kahulugan nito, ang mga emosyong nakapaloob sa mga salita at ang istilo na siyang nagbibigay-kulay at ganda sa diwang nais ipahayag ng awtor. Pinatotohanan ni Santiago ang pahayag ni Wilamowitz, isang dalubhasa sa pagsasaling-wika na ang gawaing ito ay tulad ng paglilipat ng kaluluwa ng isang patay sa ibang nilalang. Malinaw na eksaherado ang kanyang paliwanag. Ang ibig niyang sabihin ay walang ganap o perpektong salin. Ngunit, kung wala mang ganap na salin, mayroon namang maituturing na mabuting salin.

Research Questions

Ang pag-aaral na ito ay naglalayon na linangin ang pagtugon sa kahalagahan sa pagsasalin sa Filipino ng kwentong-bayan sa Bahasa Sug ng mga mag-aaral sa ikasampung baitang ng Jolo National High School. Ang mga sumusunod ay ang mga espisipikong suliranin na nilutas matapos ang kabuoang pag-aaral.

1. Ano ang demograpikong propayl ng mga respondante ayon sa:
    1.1. Edad;
    1.2. Kasarian;
    1.3. Tribo; at
    1.4. Seksyon?
2. Ano ang antas ng pagtugon sa kahalagahan sa pagsasalin patungkol sa Filipino ng Kwentong-Bayan sa Tau'sug ng mga mag-aaral sa Ikasampung Baitang ng Jolo National High School ayon sa:
    2.1. Kaalaman sa kanilang leksyon;
    2.2. Pag-unawa sa pag-aaral ng kanilang leksyon; at
    2.3. Pagkatuto sa kanilang leksyon?
3. Mayroon bang mahalagang pagkakaiba sa antas ng pagtugon sa kahalagahan sa pagsasalin sa Filipino ng Kwentong-Bayan sa Tau'sug ng mga mag-aaral sa Ikasampung Baitang ng Jolo National High School kwento kung ang mga datos ay naaayon sa kanilang demograpikong propayl ayon sa;
    1.1. Edad;
    1.2. Kasarian;
    1.3. Tribo; at
    1.4. Seksyon?
4. Mayroon bang mahalagang pag-uugnay sa pagitan ng mga sub-kategorya ng pagtugon sa kahalagahan sa pagsasalin sa Filipino ng Kwentong-Bayan?

METHODOLOGY

Research Design

Ang mananaliksik ay gumamit ng metodong diskriptibong pananaliksik. Ito ang napiling disenyo sapagkat kailangan ilarawan at ipaliwanag nang walang pagkiling at maingat na itinali ayon sa angkop na instrumentong ginamit. Isa itong paraan ng pagsasalin ng tatlong kwentong-bayan ng Tau'sug at pag-aaral ng kaugalian, paniniwala at halagang pangkatauhan na napapaloob sa mga kwento.

Research Locale

Ang pag-aaral o pananaliksik na ito ay isinagawa sa Jolo National High School noong taong Pampaaralan 2023-2024. Ang mga respondante ay kinalap mula sa Ikasampung baitang na nahahati sa limang (5) seksyon sa nasabing paaralan.

Respondents of the Study

Ang nagsilbing respondante ng pag-aaral na ito ay mga estudyanteng mula sa Jolo National High School sa Akademikong Taon 2023-2024. Ang mga respondante ay binubuo ng isang daang (100) na mag-aaral.

Sampling Proedure

Ang 100 repondante ng pananaliksik na ito ay pinili sa pamamagitan ng tinatawag na purposive sampling teknik. Ang teknik na ito ay nagbibigay ng kaparehong pagkakataon sa lahat na napili bilang respondante ng pag-aaral.

Teybol 1. Distribusyon ng mga Respondante

Seksyon	Respondante
Seksyon - A	20
Seksyon - B	20
Seksyon - C	20
Seksyon - D	20
Seksyon - E	20
Kabuuan	**100**

Ito ang mga estudyanteng tumugon upang mabuo ang pag-aaral na ito.

Instrument of the study

Ang instrumentong ginamit sa pag-aaral na ito ay talatanungan o kwestyunaryo na ginawa o inihanda mismo ng mananaliksik. Ang talatanungan ay binubuo ng 15 pahayag sa antas ng pagsasalin ng Kwentong-Bayan ng mga Tau’sug. Ang talatanungan ay binubuo ng 15 na pahayag sa lawak ng natutuhan ng mga mag-aaral sa pagsasalin ng kwentong-bayan sa Tau’sug.

Data Gathering Procedure

Ang permisyon sa pagsasagawa ng pag-aaral na ito ay hinihiling ng mananaliksik sa Dekano o pinuno ng Sulu State College Graduate Students. Pagkatapos na maaprubahan ang kahilingan, isasagawa ang mananaliksik ng pag-aaral sa nasabing lokasyon.

PARAAN NG PAGMAMARKA

Ang mga kasagutan ay itinala gamit ang sumusunod na gabay sa pagmamarka. **Teybol 2.** Gabay sa pagmamarka para sa antas ng tungkulin ng mga mag-aaral sa pagsasalin ng kwentong-bayan ng mga Tau'sug.

Scale	Mean Range	Tugon	Kwalipikadong Pahayag
5	4.50-5.00	Lubos na Sumasang-ayon	Ang mga respondante ay palaging may pagpapahalaga sa kwentong bayan ng Tau'sug.
4	3.50-4.49	Medyo Sumasang-ayon	Ang mga respondante ay madalas may pagpapahalaga sa kwentong bayan ng Tau'sug.
3	2.50-3.49	Hindi Tiyak	Ang mga respondante ay minsan may pagpapahalaga sa kwentong bayan ng Tau'sug.
2	1.50-2.49	Medyo Hindi Sumasang-ayon	Ang mga respondante ay bihirang may pagpapahalaga sa kwentong bayan ng Tau'sug.
1	1.00-1.49	Lubos na hindi Sumasang-ayon	Ang mga respondante ay hindi kailanman na may pagpapahalaga sa kwentong bayan ng Tau'sug.

Statistical Treatement of Data

Ang mga sumusunod na estatistika ay ginamit sa paglalapat ng mga datos:

1. Upang sagutin ang unang suliranin Frequency at Percentage ang ginamit upang malaman ang sosyo-demograpikong-propayl ng mga respondante.
2. Weighted mean at Standard deviation ang ginamit sa pagkuha ng tungkulin ng mga mag-aaral sa pagsasalin ng kwentong-bayan ng Tau'sug.
3. T-test for independent samples at One-Way ANOVA ang ginamit para sa isang demograpikong-propayl para sa ikatlong katanungan.
4. Person-Product-Moment Correlation naman ang ginamit para sa ika-apat na katanungan.

RESULT AND DISCUSSION

1. Ano ang demograpikong propayl ng mga respondante ayon sa; 1.1 eadad; 1.2 kasarian, 1.3 tribo, at 1.4 seksyon?

Ang talaan 1.1 ay tungkol sa demograpikong propayl ng mga mag – aaral sa ika – sampung baitang ng Jolo National High School ayon sa edad.

Makikita sa talaan na 99% ng mga respondante ay nasa edad na 15 taong gulang pataas at 1% lang ang nasa 14 taong gulang.

Ang resulta ay nagpapahiwatig na halos lahat ng mga mag – aaral sa ika – sampung baitang ng Jolo National High School ay nasa tamang edad para sa kanilang kasalukuyang grado.

Talaan 1.1 Demograpikong Propayl ng mga Mag - aaral sa Ika – Sampung Baitang ng Jolo National High School ayon sa Edad.

Edad	frequency	Porsyento
13 taong gulang	0	0%
14taong gulang	1	1%
15 taong gulang pataas	99	99%
KABUUAN	100	100%

Ang talaan 1.2 ay tungkol sa demograpikong propayl ng mga mag – aaral sa ika – sampung baitang ng Jolo National High School ayon sa kasarian. Makikita sa talaan na 60% ng mga respondante ay mga babae at 40% ay mga lalaki.

Ang resulta ay nagpapahiwatig na karamihan sa mga mag – aaral sa ika – sampung baitang ng Jolo National High School ay mga babae.

Talaan 1.2 Demograpikong Propayl ng mga Mag - aaral sa Ika – Sampung Baitang ng Jolo National High School ayon sa Kasarian.

Kasarian	Frequency	Porsyento
Lalaki	40	40%
Babae	60	60%
KABUUAN	100	100%

Ang talaan 1.3 ay tungkol sa demograpikong propayl ng mga mag – aaral sa ika – sampung baitang ng Jolo National High School ayon sa tribo. Makikita sa talaan na ang nakuhang respondante ng pananaliksik ay 97% mga Tausug at 3% lamang ang ibang tribo.

Ang resulta ay nagpapahiwatig na ang karamihan ng residente ng Jolo ay mga Tausug at kokonti lamang ang ibang tribo.

Talaan 1.3 Demograpikong Propayl ng Ika – sampung Baitang ng Jolo National High School ayon sa Tribo.

Tribo	Frequency	Porsyento
Tausug	97	97%
Ibang tribo	3	3%
KABUUAN	100	100%

Ang talaan 1.4 ay tungkol sa demograpikong propayl ng mga mag – aaral sa ika – sampung baitang ng Jolo National High School ayon sa seksyon. Makikita sa talaan na halos magkasing dami ang bilang ng mga respondante sa bawat seksyon.

Ang resulta ay nagpapahiwatig na gustong ipantay ng mananaliksik ang dami ng respondante sa bawat seksyon.

Talaan 1.4 Demograpikong Propayl ng mga Ika – sampung Baitang ng Jolo National High School ayon sa Seksyon

Seksyon	Frequency	Porsyento
A	20	20%
B	21	21%
C	20	20%
D	21	21%
E	18	18%
KABUUAN	100	100%

2. Ano ang antas ng pagtugon sa kahalagahan ng pagasasalin patungkol sa Filipino ng mga mag – aaral sa ika – sampung baitang ng Jolo National High School ayon sa; 2.1 kaalaman sa kanilang leksyon, 2.2 pag –unawa sa pag – aaral ng kanilang leksyon, at 2.3 pagkatuto sa kanilang leksyon?

Ang talaan 2.1 ay tungkol sa antas ng pagtugon sa kahalagahan ng pagsasalin patungkol sa Filipino ng mga mag – aaral sa ika – sampung baitang ng Jolo National High School ayon sa kaalaman sa kanilang leksyon.

Makikita sa talaan na ang mga respondante ay nagpahiwatig na sila ay ***medyo sumasang – ayon*** sa mga pahayag ukol sa kanilang kaalaman sa kanilang leksyon maliban sa ikatlong pahayag kung saan sila ay nagpahiwatig na ***hindi tiyak***. Ito ay tungkol ang kaalaman ng tao tungkol sa kwentong-bayan upang magkaroon ng sapat na kakayahan at pagtitiwala sa sarili at pagkakaroon ng lakas ng loob sa pakikibaka sa hamon ng buhay (mean = 3.380, SD = .708). Ilan sa mga pahayag kung saan sila ay ***medyo sumasang – ayon*** ay; dapat sa lipunan ang kwentong bayan ng Tau'sug ay maging mapanaliksik ang mga tao para sa ikakaunlad ng mga gawaing panlipunan (mean = 4.270, SD = 1.347) at sa pamamagitan ng mga matandang akda ng Tau'sug ay dapat naglalahad ng isang sambayanan o bansa upang maitataguyod ng isang pambansang layunin o mithiin (mean = 3.760, SD = 1.280).

Ang kabuuan na 3.758 ay nangangahulugan na ang mga respondante ay ***medyo sumasang – ayon*** sa mga pahayag ukol sa antas ng pagtugon sa kahalagahan ng pagsasalin sa kanilang kaalaman sa kanilang leksyon.

Ayon kay Santiago (1994), imposibleng maisalin ng ganap sa ibang wika ang sinulat ng may akda sapagkat kung maisalin man ay tiyak na may mawawala, mababago, o nadaragdag sa orihinal na diwa ng kanyang isinalin.

Talaan 2.1 Antas ng Pagtugon sa Kahalagahan ng Pagsasalin ayon sa Kanilang Kaalaman sa Kanilang Leksyon

Kaalaman sa Kanilang Leksyon	Mean	SD	Interpretasyon
1. Sa sining ang kwentong-bayan ng Tau'sug para sa mga pintor, manlililok at arkitektor sa ikakaganda at ikauunlad ng kultura na kinapapaloob ng mga tradisyon, kaugalian at paniniwala.	3.700	1.159	Medyo Sumasang - ayon
2. Dapat sa lipunan ang kwentong-bayan ng Tau'sug ay maging mapanaliksik ang mga tao para sa ikakaunlad ng mga gawaing panlipunan.	4.270	1.347	Medyo Sumasang - ayon
3. Ang kaalaman ng tao tungkol sa kwentong-bayan upang magkaroon ng sapat na kakayahan at pagtitiwala sa sarili at pagkakaroon ng lakas ng loob sa pakikibaka sa hamon ng buhay.	3.380	.708	Hindi Tiyak
4. Ang matandang kasaysayan ay mas lalong nararapat para sa pag-aaral ng kultura ng mga Tau'sug.	3.680	.898	Medyo Sumasang - ayon
5. Sa pamamagitan ng mga matandang akda ng Tau'sug ay dapat naglalahad ng isang sambayanan o bansa upang maitataguyod ng isang pambansang layunin o mithiin.	3.760	1.280	Medyo Sumasang - ayon
KABUUAN	**3.758**		**MEDYO SUMASANG - AYON**

Leyenda: 5 (4.50 – 5.00) - Lubos na Sumasang-ayon, 4 (3.50 – 4.49)– Medyo Sumasang-Ayon, 3 (2.50 – 3.49) - Hindi Tiyak, 2 (1.50 – 2.49)– Medyo Hindi Sumasang-Ayon, 1 (1.00 – 1.49)– Lubos na hindi Sumasang-ayon.

Ang talaan 2.2 ay tungkol sa antas ng pagtugon sa kahalagahan ng pagsasalin patungkol sa Filipino ng mga mag – aaral sa ika – sampung baitang ng Jolo National High School ayon sa pag – unawa sa pag – aaral ng kanilang leksyon.

Makikita sa talaan na ang mga respondante ay nagpahiwatig na sila ay ***medyo sumasang – ayon*** sa lahat ng mga pahayag ukol sa pag – unawa sa pag – aaral ng kanilang leksyon. Ilan sa mga pahayag kung saan sila ay ***medyo sumasang – ayon*** ay; binibigyan ng guro ang bawat mag – aaral na mag – isip patungkol sa kanilang ideya/opinion sa tinatalakay na leksyon/aralin (mean = 4.340, SD = 1.387) at gumagamit ang guro ng konkretong halimbawa sa pagtatalakay ng leksyon/aralin (mean = 4.310, SD = 1.032).

Ang kabuuan na 4.072 ay nangangahulugan na ang mga respondante ay ***medyo sumasang – ayon*** sa mga pahayag ukol sa kahalagahan ng pagsasalin sa pag – unawa sa pag – aaral ng kanilang leksyon.

Talaan 2.2 Antas ng Pagtugon sa Kahalagahan ng Pagsasalin ayon sa Pag – unawa sa Pag – aaral ng Kanilang Leksyon.

Pag – unawa sa Pag – aaral sa Kanilang Leksyon	Mean	SD	Interpretasyon
1. Paggamit ng guro ng pagganyak bago simulant ang leksyon/aralin.	3.980	1.005	Medyo Sumasang - ayon
2. Naiuugnay ng guro ang tinatalakay na leksyon/aralin sa tunay na buhay.	3.870	1.368	Medyo Sumasang - ayon
3. Binibigyan ng guro ng pagkakataon ang mga mag – aaral upang magpalitan ng ideya/opinion.	3.860	.964	Medyo Sumasang - ayon
4. Gumagamit ang guro ng konkretong halimbawa sa pagtatalakay ng leksyon/aralin.	4.310	1.032	Medyo Sumasang - ayon

5. Binibigyan ng guro ang bawat mag – aaral na mag – isip patungkol sa kanilang ideya/opinion sa tinatalakay na leksyon/aralin.	4.340	1.387	Medyo Sumasang - ayon
KABUUAN	**4.072**		**MEDYO SUMASANG - AYON**

Leyenda: 5 (4.50 – 5.00) - Lubos na Sumasang-ayon, 4 (3.50 – 4.49)– Medyo Sumasang-Ayon, 3 (2.50 – 3.49) - Hindi Tiyak, 2 (1.50 – 2.49)– Medyo Hindi Sumasang-Ayon, 1 (1.00 – 1.49)– Lubos na hindi Sumasang-ayon.

Ang talaan 2.3 ay tungkol sa antas ng pagtugon sa kahalagahan ng pagsasalin patungkol sa Filipino ng mga mag – aaral sa ika – sampung baitang ng Jolo National High School ayon sa pagkatuto sa kanilang leksyon.
Makikita sa talaan na ang mga respondante ay nagpahiwatig na sila ay ***medyo sumasang – ayon*** sa lahat ng mga pahayag ukol sa pagkatuto sa kanilang leksyon. Ilan sa mga pahayag kung saan sila ay ***medyo sumasang – ayon*** ay; malinaw na ibinibigay ng guro ang mga tagubilin para malinaw ang konsepto na gagawin sa leksyon/aralin (mean = 4.340, SD = 1.027) at maayos na naipaliwanag ng guro ang leksyon/aralin (mean = 4.170, SD = 1.311).

Ang kabuuan na 4.142 ay nangangahulugan na ang mga respondante ay ***medyo sumasang – ayon*** sa mga pahayag ukol sa kahalagahan ng pagsasalin ayon sa pagkatuto sa kanilang leksyon.

Talaan 2.3 Antas ng Pagtugon sa Kahalagahan ng Pagsasalin ayon sa Pagkatuto sa Kanilang Leksyon

Pagkatuto sa Kanilang Leksyon	Mean	SD	Interpretasyon
1. Maayos na naipaliwanag ng guro ang leksyon/aralin.	4.170	1.311	Medyo Sumasang - ayon
2. Ang mga kagamitang ibinibigay/ipinapagawa ng mga guro para gamitin sa pagkaunawa sa leksyon/aralin.	4.080	.993	Medyo Sumasang - ayon

3. Ang mga kagamitang panturo na ibinibigay ng guro para gamitin ay reyalidad (katotohanan).	4.080	1.079	Medyo Sumasang - ayon
4. Malinaw na ibinibigay ng guro ang mga tagubilin para malinaw ang konsepto na gagawin sa leksyon/aralin.	4.340	1.027	Medyo Sumasang – ayon
5. Nailalarawan ng guro ang reyalidad (katotohanan) ng mga gawaing may kaugnayan sa leksyon/aralin.	4.060	1.062	Medyo Sumasang - ayon
KABUUAN	**4.142**		**MEDYO SUMASANG - AYON**

Leyenda: 5 (4.50 – 5.00) - Lubos na Sumasang-ayon, 4 (3.50 – 4.49)– Medyo Sumasang-Ayon, 3 (2.50 – 3.49) - Hindi Tiyak, 2 (1.50 – 2.49)– Medyo Hindi Sumasang-Ayon, 1 (1.00 – 1.49)– Lubos na hindi Sumasang-ayon.

3. Mayroon bang mahalagang pagkakaiba sa antas ng pagtugon sa kahalagahan ng pagsasalin sa Filipino ng kwentong bayan sa Bahasa Sug ng mga mag – aaral sa ika – sampung baitang ng Jolo National High School kung ang mga datos ay naayon sa kanilang demograpikong propayl ayon sa edad, kasarian, tribo, at seksyon?

Ang t- test ay ginamit para sa pagkakaiba sa antas ng pagtugon sa kahalagahan ng pagsasalin sa Filipino ng kwentong bayan sa Bahasa Sug ng mga mag – aaral sa ika – sampung baitang ng Jolo National High School kung ang mga datos ay naayon sa kanilang demograpikong propayl ayon sa kasarian.

Ang sig. value ng t – test na .304 para sa kaalaman sa kanilang leksyon ay mas mataas kesa lebel na .05, ang sig. value ng t- est para sa pag – unawa sa pag – aaral ng kanilang leksyon ay mas mataas kesa lebel na .05, at ang sig. value ng t – test na .244 naman ay mas mataas kesa lebel na .05. Ibig sabihin nito ay tinatanggap ang negatibong hipotesis na walang mahalagang pagkakaiba sa antas ng pagtugon sa kahalagahan ng pagsasalin sa Filipino ng kwentong bayan sa Bahasa Sug ayon sa kasarian.

Ito ay nagpapahiwatig na walang basehan upang makita na ang kasarian ay may kaibahan sa sa antas ng pagtugon sa kahalagahan ng pagsasalin sa Filipino ng kwentong bayan sa Bahasa Sug.

Talaan 3.1 t – test para sa Pagkakaiba sa Antas ng Pagtugon sa Kahalagahan ng Pagsasalin sa Filipino ng Kwentong Bayan sa Bahasa Sug ayon sa Kasarian.

Variables	Grouping	Mean	SD	Mean Diff.	t	Sig.	Description
Kaalaman sa kanilang leksyon	Lalaki	3.850	1.085				Walang
	Babae	3.670	1.125	.180	.496	.304	Pagkakaiba
Pag – unawa sa Pag – aaral ng kanilang leksyon	Lalaki	3.940	1.023		.450	.263	Walang
	Babae	3.720	1.150	.220			Pagkakaiba
Pagkatuto sa kanilang leksyon	Lalaki	3.650	1.330				Walang
	Babae	3.520	1.250	.130	.650	.244	Pagkakaiba

Significant at .05 level

Talaan 3.2 Analysis of Variance (ANOVA) ang ginamit para sa edad, tribo, at seksyon.

Ang sig. value na 0.262 para sa edad ay mas mataas kesa lebel na .05 at ang sig. value na 0.143 para sa tribo ay mas mataas kesa lebel na .05, at ang sig. value naman na 0.340 para sa seksyon ay mas mataas kesa lebel na .05.

Ang ibig sabihin ay tinatanggap ang negatibong haypotesis pamamagitan ng edad, tribo, at seksyon.

Ang resulta ay nagpapahiwatig na walang mahalagang pagkakaiba sa antas ng pagtugon sa kahalagahan ng pagsasalin sa Filipino ng kwentong bayan sa Bahasa Sug ayon sa edad, tribo, at seksyon.

Ang resulta ay umaayon sa teorya ni Lumbera (1982) na ang pagsasalin pantikang katutubo at ang pag – aaral ng kulturang nakapaloob rito ay nagpapalawak ng ating panitikan at makakatulong sa pag – unawa ng ating nakaraan.

Talaan 3.2 ANOVA para sa Mahalagang Pagkakaiba sa Antas ng Pagtugon sa Kahalagahan ng Pagsasalin sa Filipino ng Kwentong Bayan sa Bahasa Sug ayon sa Edad, Tribo, at Seksyon.

		Sum of Square	df	Mean Square	f	Sig.	Interpretasyon
Edad							
	Between Groups	1.707	2	.854	.631	.262	Walang Pagkakaiba
	Within Groups	131.293	97	1.354			
	Total	133.000	99				
Tribo							
	Between Groups	2.890	1	2.890	2.177	.143	Walang Pagkakaiba
	Within Groups	130.110	98	1.328			
	Total	133.000	99				
Seksyon							
	Between Groups	6.120	4	1.530	1.146	.340	Walang Pagkakaiba
	Within Groups	126.880	95	1.336			
	Total	133.000	99				

Significant at .05 level

4. Mayroon bang mahalagang pag – uugnay sa pagitan ng mga sub – kategorya ng pagtugon sa kahalagahan ng pagsasalin sa Filipino ng kwentong bayan?

Ang talaan 4 ay tungkol sa mahalagang pag – uugnayan sa pagitan ng mga sub – kategorya ng pagtugon sa kahalagahan ng pagsasalin sa Filipino ng kwentong bayan. Makikita sa talaan ang ***napakataas na kaugnayan*** ng kaalaman sa kanilang leksyon (r = .715), ***mataas na kaugnayan*** sa pag – unawa sa kanilang leksyon (r = 0.651), at ***mataas na kaugnayan*** sa pagkatuto sa kanilang leksyon (r = 0.646).

Ang resulta ay nagpapahiwatig na ang kaalaman, pag – unawa, at pagkatuto ng isang mag–aaral sa kanilang leksyon ay lubhang napakahalaga at hindi pwedeng ihiwalay sa isat – isa.

Talaan 4. Mahalagang Pag – uugnay sa Pagitan ng mga Sub – kategorya ng Pagtugon sa Kahalagahan ng Pagsasalin sa Filipino ng Kwentong Bayan.

		Pearson r	Sig.	n	Deskripsyon
Kaalaman sa Kanilang Leksyon	Pag - unawa	.756	.000	100	Napakataas
	Pagkatuto	.674	.000	100	Mataas
	Kabuuan	**.715**			**NAPAKATAAS**
Pag – unawa sa Pag – aaral ng Kanilang Leksyon	Kaalaman	.636	.000	100	Mataas
	Pagkatuto	.665	.000	100	Mataas
	Kabuuan	**.651**			**MATAAS**
Pagkatuto ssa Kanilang Leksyon	Kaalaman	.691	.000	100	Mataas
	Pag - unawa	.601	.000	100	Mataas
	Kabuuan	**.646**			**MATAAS**

*Correlation Coefficient is significant at £ = .05

Correlation Scales adapted from Hopkins (2002):
0.0– 0.1 = Nearly Zero (halos wala); 0.1 – 0.3 = Low (mababa);
0.3 – 0.5 = Moderate (katamtaman); 0.5 – 0.7 = High (mataas);
0.7 – 0.9 = Very High (napakataas); 0.9 – 1.0 = Nearly Perfect (halos perpekto)

Conclusions

Ang mga sumusunod na konklusyon ay naayon sa natuklasan ng pananaliksik:

Ang mga mag – aaral ng ika – sampung baitang ng Jolo National High School ay nasa tamang edad para sa kanilang kasalukuyang grado, karamihan ay babae, Tausug, at sadyang gustong ipantay ng mananaliksik ang dami ng respondante sa bawat seksyon.

Ang mga respondante ay hindi masyadong kumbinsido sa kahalagahan ng pagsasalin sa Filipino ng kwentong bayan sa Bahasa Sug sa kadahilanan na maiiba ng konti ang kwento ayon sa pagsasalin nito ng isang eksperto.

Ang kawalan ng kaibahan sa kahalagahan ng pagsasalin sa Filipino ng kwentong bayan sa Bahasa Sug ng mga mag – aaral sa ika – sampung baitang ng Jolo National High School kung ang mga datos ay naayon sa kanilang demograpikong propayl ay nangangahulugan na ang propayl ay hindi maipapakita ang kaibahan ng mga respondante sa isat – isa.

Ang napakataas o mataas na pag – uugnayan sa pagitan ng mga sub – kategorya ng pagtugon sa kahalagahan ng pagsasalin sa Filipino ng kwentong bayan ayon sa kaalaman sa kanilang leksyon at mataas na pag – uugnayan sa pag – unawa sa pag – aaral ng kanilang leksyon at pagkatuto sa kanilang leksyon ay nangangahulugan na lahat ng aspeto ay napakahalaga at napakahirap na paghiwalayin.

Recommendations

Ang mga sumusunod ay inirerekomenda ayon sa natuklasan sa pananaliksik:

1. Dapat maging maingat sa pagsasalin ng kwentong bayan upang ang tutuong diwa nito ay hindi mawala.
2. Kung magsasalin man ng kwentong bayan sa isang wika, dapat na isang eksperto sa
naturang wika ang gagawa nito upang hindi maiba ang takbo ng kwento.
3. Dapat suriing mabuti ang natapos na pagsasalin ng lehitimong nagsasalita ng nasabing wika na ginamit sa isang kwentong bayan.
4. Ang pagsasalin ng kwentong bayan sa ibang wika ay lubhang napakahirap. Kaya, ito ay hindi dapat basta ginagawa lamang at pag – aralan ng husto.

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Complicance with Ethical Standards

Siniguro ang pagsasagawa ng pananaliksik ay susunod sa mga panuntunan at pamantayan. Nagbigay ang mananaliksik ng informed consent sa isinagawang pagaaral para sa mga kalahok para mabasa at mapag-aralan.

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PARENTAL COMMUNICATION PATTERNS IN SEX DISCUSSIONS AS PREDICTOR OF SEXUAL SELF-EFFICACY OF FILIPINO TEENAGERS

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ABSTRACT

This research investigated the different parental communication patterns using the Family Communication Patterns Theory regarding sex discussion and how it predicts the sexual self-efficacy of Filipino teenagers. Using cluster sampling method, four hundred teenagers with ages ranging from 15 to 19 years old were gathered to answer a two-part survey questionnaire. Using regression analysis, it was determined that parental communication patterns do predict the level of sexual self-efficacy of teenagers ($R = 0.207$, $F(2,397) = 8.93$ $p < .001$). The results also showed that Filipino teenagers have a high sexual self-efficacy (Contraceptive Use $\sum = 3.30$ SD= 0.57, Consent $\sum = 3.51$ SD= 0.49, Reproductive Health $\sum = 3.35$ SD= 0.58, Sex Education $\sum = 3.47$ SD= 0.52) which leads to the conclusion that they have the ability to control their sexual behavior. It was also found out that the protective pattern (n=134, 33.5%), is the most used parental communication pattern. However, parental communication patterns predict sexual self-efficacy by 3.82% (Adjusted $R2 = 0.0382$) which suggests that there are other factors that predict sexual self-efficacy. Results show that parental communication patterns do predict the sexual self-efficacy of Filipino teenagers.

Keywords: *parental communication, teenage pregnancy, HIV/AIDS, Filipino teenagers, sexual self-efficacy, contraceptive use, reproductive health*

INTRODUCTION

There are numerous consequences to risky sexual behavior, such as teenage pregnancy, and HIV/AIDS infection. There is an alarming increase in the rate of live births among 10–14-year-old girls. According to PSA (2022), an increase from 1,903 in 2016 to 2,113 births was recorded in 2020. Teenage pregnancy remains as a threat to Filipino girls, as maternal conditions are the second most cause of mortality and fourth in disability-adjusted life years worldwide among girls aged 15-19 years, as stated by UNICEF (2022). On the other hand, the Philippine Statistics Authority (2023) reported decline in the teenage pregnancy rate in the Philippines from 2017 to 2022, wherein from 8.6 percent, it went down to 5.4 percent, counting 5,531 young women from ages 15-19 years old. Aside from teenage pregnancy, unprotected sexual intercourse increases the risk of acquiring sexually transmitted diseases (STDs), human immunodeficiency virus (HIV), and acquired immunodeficiency syndrome (AIDS). HIV is considered a "youth epidemic" in the Philippines by the National Youth Commission (NYC), as reported by Montemayor (2018). Over 150,000 adolescents aged 10-19 were newly infected with HIV in 2020 worldwide. With that, it brings up the total number of adolescents living with the virus to 1.75 million. Additionally, 39,000 adolescents succumbed to complications caused by AIDS in the same year (UNICEF, 2021).

In the Philippines, the inadequacy of open communication between parents and their children about sex, contraception, and pregnancy is one of the factors that influences the high incidence of teenage pregnancy. Based on the study of Gregorio (2018), young Filipino women usually rely on their partners for information about sex, who themselves may have learned from sources such as friends, magazines, or the internet, where explicit materials are easily accessible. This limited and often unreliable information about sexual topics leaves young people with little guidance, resulting in risky sexual behavior. Additionally, in the 2021 study conducted by the University of the Philippines Population Institute (2022) showed that HIV/AIDS awareness among youth in the Philippines had hit an all-time low since 1994, where a considerable decline was seen from the 95-percent awareness in 1994 to 76- percent in 2021. Thirty-five percent of these young individuals lacked the belief that the use of condoms during sexual intercourse lowers the chance of being infected by HIV. Furthermore, James, Kawano, Sunday, and Chullapant (2022) cited the study of Tuason, Bernarte, and Dong (2017), stating that religious beliefs and the lack of parental discussions about sex lead to a low rate of condom usage among young Filipino men. Arguilla and Habitan (2014) stated that the role of parents in parent-adolescent communication plays a significant role as it can predict if whether they can create a good relationship to their child, which can help in both discussing risky sexual behavior and making decisions on whether one act should be done or not. Aforementioned evidences indicate that inadequate parental communication with their children about sex can increase the likelihood of adolescents engaging in risky sexual behavior, which in turn can lead to issues such as teenage pregnancy, as well as the acquisition of sexually transmitted diseases, including HIV/AIDS.

This research aims to determine the patterns of communication regarding sex discussion of Filipino Parents as perceived by their teenage children. Additionally, this study also

aims to determine if parental patterns of communication regarding sex discussion predict sexual self- efficacy of Filipino teenagers. Moreover, the researchers intend to know what parental communication pattern is most frequently used by Filipino parents when discussing sex, pregnancy, contraceptive use, and the risks of unprotected intercourse, such as acquiring STDs and HIV/AIDS, as well as the frequency of communication between parent and child. Lastly, the researches aim to know the level of sexual self-efficacy of Filipino teenagers.

The study may contribute to the existing studies regarding parental communication patterns and guide future researchers to explore more areas that could be affected by different parental communication patterns. Moreover, the study may contribute to existing studies in Family Psychology, and to the Filipino community, especially to parents with adolescent children, wherein the study may impart additional knowledge on the different ways of communicating with their child regarding sex discussions in a way that may improve their child's sexual self-efficacy. Aside from this, the study may contribute to the existing studies in Adolescent Psychology on how the parent-child communication influences their perceived ability to manage and control their sexual behavior, negotiate sexual situations, and engage in sexual activity that is safe and consensual.

Research Questions

The following queries will be answered by this study:
Research Question 1: What is the most often used parental communication pattern as perceived by Filipino teenagers?
Research Question 2: What are the levels of sexual self-efficacy of Filipino teenagers?
Research Question 3: Do parental communication patterns predict the sexual self-efficacy of Filipino teenagers?

H_0. Parental communication patterns do not predict the sexual self-efficacy of Filipino teenagers.
H_a. Parental communication patterns predict the sexual self-efficacy of Filipino teenagers.

METHODOLOGY

To accomplish the objectives of the study, a quantitative survey design was used. According to Creswell & Creswell (2017) it is defined as a study that is focused on reviewing attitudes, trends, and opinions of a population using questionnaires and studying the population.

This study was conducted on selected secondary schools located in Region IV-A CALABARZON of the Philippines. Based on the Census of the Population and Housing released by the Philippine Statistic Authority (2021), CALABARZON has the highest population of adolescents ages 15-19 years with a total of 1,470,129, both male and female.

The researchers used cluster sampling method wherein they randomly selected the participants from already-existing or naturally occurring groups. For instance, towns or schools within a district, and families within a society are examples of clusters where the researchers can narrow down the selection of their participants. Cluster sampling was defined as a type of probability sampling technique where the researchers divide the population into groups and the selected participants will have an equal chance of being a part of the sample. (Bhardwaj, 2019).

With the use of cluster sampling method, the researchers of this study gathered a total number of 400 adolescent participants from the non-sectarian private and public secondary schools in CALABARZON. These participants had met the criteria set by the researchers who are teenagers from age 15 to 19 years old that reside within the area of CALABARZON that has the highest population of adolescents. The researchers excluded those adolescents who no longer has communication with both parents.

The researchers used a researcher-made questionnaire and a modified questionnaire to measure the variables. In this study, the researchers used a Sexual Self-Efficacy Scale (SSE) and the modified Revised Family Communication Pattern Instrument. The Sexual Self-Efficacy Scale is a 30-item researcher-made that consists of four (4) domains: contraceptive use, consent, reproductive health, and sex education which helped measure the sexual self-efficacy of adolescents. The Revised Family Communication Pattern Instrument (RFCP) by Koener and Fitzpatrick (2002) is a 44-item instrument that will determine the communication of parent-child by measuring their two dimensions: (1) conversation and (2) conformity orientations. The researchers have made modifications with the RFCP to further fit the objectives of the study. Using the Cronbach's alpha, it was seen that the researcher-made questionnaire yielded an excellent reliability rating ($\alpha = 0.895$), while the modified RFCP yielded a good reliability rating ($\alpha = 0.857$). According to Jones, Baxter and Khanduja (2013), using a survey design creates a higher statistical power with its large population. It can also collect vast amounts of data with the availability of validated models. This will help the researchers gather information to explain how parental communication helps the sexual self-efficacy of Filipino teenagers.

Upon the ethical approval of the university's ethics committee, the researchers sought out the approval of the principal of the selected school for the distribution of the questionnaires amongst the target population. Upon approval, the researchers provided assent forms to participants who are ages 15-17 years old, and informed consent forms for those who are of legal age. Those who have signed to participate was given one printed questionnaire at a time, and was given ample time to answer. The use of paper-based questionnaires is for the researchers to have more liberty to monitor the respondents while they answer to ensure that they were not be influenced by the answers of their peers, as well as being able to ask questions from the researchers immediately for clarifications when needed. After the respondents have finished answering, the researchers gathered all answered questionnaires, tallied and organize the data then ran the data for analysis.

The study was interpreted using Linear Regression Analysis in order to examine whether parental communication pattern in sex discussions is a predictor to the sexual self-efficacy of Filipino teenagers. The software that was used was the Statistical Package for Social Sciences version 21.

RESULTS

Table 1
Frequency and Percentages of Participants' Demographic

Age	No. of respondents (n=400)	%
15	48	12%
16	185	46%
17	68	17%
18	59	15%
19	40	10%
Total	400	100%

Table 1 shows the frequency and percentage of 400 participants by age. The average age being 16.65, and a standard deviation of 1.17. The most common age was 16 years old with 185 participants (46%). The least common age was 19 years old with 40 participants (10%).

Table 1
Evaluation Scale for Parental Communication Pattern in Sex Discussion

Scale	Interpretation
1.00 – 2.50	Low
2.51– 4.00	High

Table 2 shows the scale and verbal interpretation of parental communication pattern in sex discussion, in which 1.00 to 2.50 were interpreted as low while 2.51 to 4.00 were interpreted as high.

Table 2
Frequency and Percentages of Parental Communication Patterns in Sex Discussions and its Dimensions among Four Hundred (400) Filipino Teenagers

Parental Communication Pattern in Sex Discussions	No. of Respondents' Results	%
Conversation Orientation		

High	180	45%
Low	220	55%
Conformity Orientation		
High	205	51.25%
Low	195	48.75%

Table 3 shows the two dimensions of parental communication pattern in sex discussion: conversation orientation has a high percentage of 45%, and 55% as its low percentage. Conformity orientation, on the other hand, has a high percentage of 51.25% and a low percentage of 48.75%.

Table 3
Frequency and Percentages of Parental Communication Patterns in Sex Discussions among Four Hundred Filipino (400) Teenagers

Parental Communication Pattern in Sex Discussions	No. of Respondents Results	%
Consensual	71	17.75%
Pluralistic	109	27.25%
Protective	134	33.5%
Laissez-faire	86	21.5%

Table 4 displays the frequency and percentages for the 400 participants across the 4 parental communication patterns of consensual, pluralistic, protective, and laissez-faire. The most common pattern was protective, represented by 134 participants (33.5% of the sample). Pluralistic was second most common with 109 participants (27.25%). Laissez-faire was third with 86 participants (21.5%). The least common was the consensual pattern with only 71 participants (17.75% of the sample).

Table 4
Sexual Self-Efficacy Scale and Verbal Interpretation

Scale	Interpretation
1.00 – 1.74	Low
1.75 – 2.49	Moderately Low
2.50 – 3.24	Moderately High
3.25 – 4.00	High

Table 6 presents that each four domains of the sexual self-efficacy scale were able to have both low and high percentages. For the contraceptive use, moderate low got the lowest percentage of 7%, while high got 58.5%. Consent domain has a lowest percentage of 0.5%, and 74% as its highest. Reproductive health with 1.75% being the lowest and

59.25% as the highest one. Lastly, sex education had its lowest percentage of 1.75%, and 74.25% as the highest. Majority of participants scored in the high range across all domains. The lowest area of sexual self-efficacy was contraceptive use, where 11 participants (2.75%) scored low. All other domains had 1.75% or less of participants scoring low self-efficacy. The highest levels of high self-efficacy were found for consent (74%) and sex education (74.25%).

Table 5

Frequency and Percentages of Sexual Self-Efficacy and its domains among Four Hundred (400) Filipino Teenagers

Sexual Self-Efficacy	No. of Respondents' Results	%
Contraceptive Use		
Low	11	2.75%
Moderately Low	28	7%
Moderately High	127	31.75%
High	234	58.5%
Consent		
Low	2	0.5%
Moderately Low	13	3.25%
Moderately High	89	22.25%
High	296	74%
Reproductive Health		
Low	7	1.75%
Moderately Low	19	3.25%
Moderately High	137	22.25%
High	237	74%
Sex Education		
Low	7	1.75%
Moderately Low	10	2.5%
Moderately High	86	21.25%
High	297	74.25%

Table 6

Mean and Standard Deviation of Parental Communication Dimensions

Measure	Mean	SD	Verbal Interpretation

Conversation Orientation	2.42	0.56	Low
Conformity Orientation	2.56	0.56	High

Table 7 presents the results of the Parental Communication Patterns with the Conversation Orientation having a mean of 2.42 and a standard deviation of 0.56 and Conformity Orientation with a mean of 2.56 and a standard deviation of 0.56.

Table 7

Mean and Standard Deviation of Sexual-Self Efficacy Domains

Measure	Mean	SD	Verbal Interpretation
Contraceptive Use	3.28	0.59	High
Consent	3.48	0.49	High
Reproductive Health	3.32	0.61	High
Sex Education	3.48	0.52	High

Table 8 shows the result of the Sexual Self-Efficacy with the Contraceptive Use having a mean of 3.28 and a standard deviation of 0.59, Consent with a mean of 3.48 and a standard deviation of 0.49, Reproductive Health with a mean of 3.32 and a standard deviation of 0.61 and Sex Education with a mean of 3.48 and a standard deviation of 0.52. All domains showed high mean scores ranging from 3.28 for contraceptive use to 3.48 for both consent and sex education. Variability among the dimensions of sexual self-efficacy is relatively even. The lowest variability was found for consent (SD=0.49) and the highest for reproductive health (SD=0.61).

Table 8

Linear Regression between Parental Communication Patterns in Sex Discussions and Sexual Self-Efficacy among Filipino Teenagers

Independent Variable	Dependent Variable	R	Adjusted R^2	F (2,397)	p
Conversation Orientation Conformity Orientation	Sexual Self-Efficacy	0.213	0.0405	9.43	< .001

Table 9 shows the results of the linear regression analysis examining Parental Communication Patterns in Sex Discussions as predictor of Sexual Self-Efficacy among Filipino Teenagers. Results provide evidence that Parental Communication Patterns in Sex Discussions is a statistically significant predictor of Sexual Self-Efficacy among Filipino Teenagers at 95% Confidence Level ($R = 0.213$, $F(2,397) = 9.43$, $p < .001$). The adjusted R2 value of 0.0405 indicates that Parental Communication Patterns in Sex Discussions explained 4.05% of the variance in Sexual Self-Efficacy.

Table 9
Linear Regression between Parental Communication Patterns in Sex Discussions and Contraceptive Use among Filipino Teenagers

Independent Variable	Dependent Variable	R	Adjusted R^2	F (2,397)	p
Conversation Orientation Conformity Orientation	Contraceptive Use	0.206	0.0377	8.81	< .001

Table 10 shows the results of the linear regression analysis examining Parental Communication Patterns in Sex Discussions as predictor of Contraceptive Use among Filipino Teenagers. Results provide evidence that Parental Communication Patterns in Sex Discussions is a statistically significant predictor of Contraceptive Use among Filipino Teenagers at 95% Confidence Level (R = 0.206, F (2,397) = 8.81 p < .001). The adjusted R2 value of 0.037 indicates that Parental Communication Patterns in Sex Discussions explained 3.77% of the variance in Contraceptive Use.

Table 10
Linear Regression between Parental Communication Patterns in Sex Discussions and Consent among Filipino Teenagers

Independent Variable	Dependent Variable	R	Adjusted R^2	F (2,397)	p
Conversation Orientation Conformity Orientation	Consent	0.183	0.0285	6.85	.001

Table 11 shows the results of the linear regression analysis examining Parental Communication Patterns in Sex Discussions as a predictor of Consent among Filipino Teenagers. Results provide evidence that Parental Communication Patterns in Sex Discussions is a statistically significant predictor of Consent among Filipino Teenagers at 95% Confidence Level (R = 0. 183, F (2,397) = 6.85 p = 0.001). The adjusted R^2 value of 0. 0285 indicates that Parental Communication Patterns in Sex Discussions explained 2.85% of the variance in Consent.

Table 11
Linear Regression between Parental Communication Patterns in Sex Discussions and Reproductive Health among Filipino Teenagers

Independent Variable	Dependent Variable	R	Adjusted R^2	F (2,397)	p
Conversation Orientation Conformity Orientation	Reproductive Health	0.166	0.0226	5.62	.004

Table 12 shows the results of the linear regression analysis examining Parental Communication Patterns in Sex Discussions as a predictor of Reproductive Health among Filipino Teenagers. Results provide evidence that Parental Communication Patterns in Sex Discussions is a statistically significant predictor of Reproductive Health among Filipino Teenagers at 95% Confidence Level (R = 0.166, F (2,397) = 5.62 p = 0.004). The adjusted R2 value of 0.0226 indicates that Parental Communication Patterns in Sex Discussions explained 2.26% of the variance in Reproductive Health.

Table 12

Linear Regression between Parental Communication Patterns in Sex Discussions and Sex Education among Filipino Teenagers

Independent Variable	Dependent Variable	R	Adjusted R^2	F (2,397)	p
Conversation Orientation Conformity Orientation	Sex Education	0.181	0.0278	6.71	.001

Table 13 shows the results of the linear regression analysis examining Parental Communication Patterns in Sex Discussions as a predictor of Sex Education among Filipino teenagers. Results provide evidence that Parental Communication Patterns in Sex Discussions is a statistically significant predictor of Sex Education among Filipino Teenagers at 95% Confidence Level (R = 0.181, F (2,397) = 6.71 p =0.001). The adjusted R2 value of 0.0278 indicates that Parental Communication Patterns in Sex Discussions explained 2.78% of the variance in Sex Education.

DISCUSSION

It was seen that majority of Filipino teenagers have a high sexual self-efficacy which suggests that they have good control over their sexual behavior- make informed decisions, practice sex that is safe and consensual. It could be supported by the fact that there is a decrease on the rate of teenage pregnancy in the Philippines from 8.6% in 2017, it has gone down to 5.4% in 2022 (PSA, 2023).

The protective pattern was found to be the most used parental communication pattern through the lens of Filipino teenagers. This pattern suggests that these families rarely engage in conversations regarding sexual topics, but parents more often than not implement rules and ideologies that should be followed by their children. Habito and their colleagues (2021) emphasized how Catholic conservative beliefs and ideologies have a strong hold on how Filipinos view, talk, and act when it comes to sex, as it is believed to

be way for procreation for married couples, it puts the premarital use of contraceptives in a bad light. Melgar, Melgar, Festin, Hoopes, and Chandra-Mouli (2018) showed how it is evident how the Philippine government, its politicians and lawmakers are influenced by these beliefs despite the separation of the church and government. The lack of government policies and services that will better the accessibility of contraceptives to adolescents' is evident, which, if given proper attention, would tremendously help reduce the risks of engaging in adolescent unprotected sex such as teenage pregnancy, and contracting HIV/AIDS or sexually transmitted diseases. Since sex, in general, is not a widely talked about topic by Filipinos, many Filipino parents frown upon and keep mum about adolescent sex which may have been a result of their parents not opening up these topics as well.

However, despite the avoidance to go into in-depth conversations about sexual topics with their children, Filipino parents are still made aware of the consequences and the risks that come with adolescent sex, more specifically, risky sexual behavior such as engaging in unprotected sex. Infomercials online on teenage pregnancy, HIV/AIDS and STDs, the Filipino television drama *Angelito: Ang Batang Ama*, radio stations reading confessions from teenagers who got pregnant early, these are the products of mass media and its attempt to discuss and inform the mass of underage sex and it effects. Filipino parents being consumers of these media are able to grasp how "bad" engaging in adolescent sex is, hence they set rules to their children to ensure that their children do not have sex while they are still young and unmarried.

The study of Ventanilla and Villaruel (2022) showed that majority of their respondents who are women who have experienced teenage pregnancy have a protective family communication pattern which shows that despite the parents setting rules and expecting their children to conform to their decisions and beliefs, teenage pregnancy was not prevented. This suggests that these women might not have made informed decisions when they engaged in adolescent sex, and thus contradict the results shown in this study.

The research findings suggest that parental communication patterns predict the sexual self-efficacy of Filipino teenagers. However, results also indicate that parental communication patterns in sex discussions account for a small percentage of the variation in sexual self-efficacy. This indicates that there are other factors that contribute substantially including [1] education, [2] the internet, [3] peers. Teenagers spend most of their time at school, and it is a place where their most important task is to learn. Education on sexual and reproductive health may shape a teenager's perceived ability to practice safe and consensual sex. As recommended by the WHO (2018), implementing a program such as the Comprehensive Sexual Education (CSE) is helpful for teenagers as they transition to adulthood, as it is helpful tool in the improvement of their sexual and reproductive health. Meanwhile, the internet has readily available resources that may also affect the SSE of teenagers such as social media posts, news articles, discussion and articles by the WHO and DOH. Especially with the internet bridging the gap between countries, it is easy to learn and be friends with people from more liberated countries and talk about the ways in engaging in safe sex.

Conclusions

The study's main objective was to ascertain the patterns of communication regarding sex discussion of Filipino Parents as perceived by their adolescent children. Additionally, this study also determined that a Filipino adolescent's sexual self-efficacy can be predicted by the parental communication patterns on sex topics.

Based on the responses of the participants through a survey form, it was revealed that the parental communication pattern is a significant predictor of Filipino teenagers' sexual-self efficacy at 95% Confidence Level ($R2 = 0.0382$ (3.82%), $F = 8.93$, $p < .001$). Therefore, the null hypothesis was rejected. This result led to the conclusion that any from the aforementioned parental communication pattern, can predict a teenagers' sexual-self efficacy.

Furthermore, through the above findings, the researchers came to the conclusion that practicing appropriate parental communication patterns inside every household can lead to a teenager's healthy sexual-self efficacy.

Recommendations

The following recommendations are made so that the research can further widen the scope of the research. The researchers recommend imploring the mixed method approach when creating a similar study to broaden the perspective of the study.

The researchers would also suggest changing the demographics and the locale of the study. Varying the ages, focus on the socioeconomic status, and the location of the study. Other factors should also be considered such as social media, peers, partners etc.

It is also suggested to inquire with an external statistician in order to eliminate bias.

Making qualitative research connected to this study may also yield a deeper understanding and a more in-depth analysis regarding the topic.

Compliance with Ethical Standards

There were ethical challenges that the researchers of this study have dealt with, hence, the researchers adhered to the APA ethical guidelines (2017, pp. 6, 7); [1] Privacy and confidentiality. The researchers kept all information collected for this study strictly confidential and only used it for research and academic purposes. Rest assured that there were no names or other identifying information used when discussing or reporting the data. [2] Inflicting no harm to the respondents. Researchers secured the safety of the participants; any form of discomfort was taken into consideration and risk was not overlooked to secure their safety. [3] Dissemination of informed consent forms. The participants were oriented on every part of the study and every detail of the approved informed consent form as deception did not occur in conducting this study. [4] Distribution of assent forms. This study gathered participants below the age of 18, thus, the

researchers appropriately distributed assent forms to the selected minor participants. [5] Institution's approval. The researchers had the approval from both selected secondary high school and Research Development and Innovation Center in gathering the needed data of this study. Prior to commencing the study, the researchers ensured accuracy of information and obtained all the necessary approvals. Rest assured that the approved research protocols was followed. This also to comply with the law of the Executive Order No. 209, Family Code of the Philippines, Article 218, wherein it was stated that a minor child is subjected to the particular parental authority and duty of the school, its administration and instructors, or the person, business, or institution providing child care while the kid is in their care, supervision, or custody (Exec. Order No. 209, 1987).

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PERCEIVED IMPACT OF ENGAGEMENT WITH COMMUNITY SERVICE ON STUDENTS' LEARNING AND DEVELOPMENT TOWARD ACHIEVING SCHOOL's PHILOSOPHY

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ABSTRACT

This study aimed to determine the impact of engagement with community service on students' learning and development toward achieving the school's philosophy of total development of man based on faith, science, and virtue. A descriptive survey research design was utilized involving 229 college students who graduated in 2019 and 2023. The data was gathered through a survey questionnaire. Statistical tools such as frequency, percentage, rank, and mean were used to analyze and present the data. Results of the study reveal that the college students of RCC are mostly engaged in community service activities in terms of social and cultural, education and values formation, health and sanitation, environment and cleanliness, and sports and recreation while they are less engaged in community organization, livelihood, and research. The students strongly agree that their engagement with community service activities opens their eyes to the conditions of people in society, they gain a better understanding of the needs of others, they realize that they are more blessed than others, they are inspired and motivated to continuously improve their life, and they gain a better understanding of people. Through the students' engagement with community service activities, their development based on faith, science, and virtue is achieved to a very great extent. This demonstrates their characteristics as true RCCians. The result implies that the engagement of the college students of RCC with community service activities should be strengthened and sustained to continuously develop well-rounded graduates imbued with the values of faith, science, and virtue.

Keywords: *community service engagement, philosophy, service learning*

INTRODUCTION

The RCC has had an unwavering determination to give quality and purposeful education for more than 77 years. It has provided quality education and services responsive to the changing local and global needs of the students guided by the founder's philosophy of "total development of man based on faith, science, and virtue" (RCC College Student Handbook, 2017).

The term "philosophy" plays a significant role in the lives of the students and the institution itself. In fact, as per Yazıcı (2016), philosophy has different definitions as there are various philosophers from the viewpoints of distinct periods. It is difficult to accurately define its meaning (Heimsoeth, 2011, as cited in Alemdar & Aytaç, 2022). On the other hand, focusing on the literal meaning of philosophy, Cox (2014) argued that it is defined as "love of wisdom," supported by Sönmez (2019) who defined philosophy as "seeking wisdom" for the two words *philo* and *sophia* is the Greek term for love and wisdom.

An institution's philosophy shapes its vision, mission, goals, and objectives. In a study made by Gezer (2018), it was stated that it shapes the teachers' and students' beliefs, experiences, and learning similar to their attitudes toward community service engagement.

Most higher education institutions associate student engagement in community service with vital importance in student learning (Carlisle et al., 2020; Dienhart et al., 2016; Hlalele et al., 2015; Pak, 2020; Zilvinskis et al., 2017). Educational institutions have focused their curriculum on having diverse programs for the community and thus producing a graduate who is highly engaged and has civic-minded characteristics in community service (Afzal & Hussain, 2020). The integration of community engagement in the curriculum benefits the students' fundamental skills in the community and world as a whole – serving to learn and learning to serve.

Given the importance of engagement of students with community service activities, several authors cited that it deepens the awareness of civic responsibility (Bringle & Hatcher, 1995, as cited in Carlisle et al., 2020), improves social skills and community awareness (Eyler & Giles, 1999, as cited in Afzal & Hussain, 2020), enhances social connectedness (Kingston et al., 2014; Kulesza et al., 2022), and strengthen the understanding in subject matter or course content (Mahoney & Schamber, 2011, as cited in Kingston et al., 2014; Smith, 2021), which led to improved academic performance of the students (Afzal & Hussain, 2020; Parlier et al., 2022; Wood & Harris, 2015).

In consideration of community engagement in students' learning, Shumer (2017) mentioned that authentic learning or real education transpires from the experience created and that life is interconnected with the process of community. In addition, applying what students have learned in serving the community goes beyond the simple application of a certain concept in school, it is connected to the experience of others.

Previous studies on the impact of engagement with community service on the student's learning and experiences were conducted and multiple approaches were used to identify the positive and negative factors of the variables.

To determine the service-learning approach to meaningful learning outcomes in a practice profession, Smith (2021) conducted a study on fourteen students who took part in the convergent-mixed methods study. The result implies that there is a positive adjustment to the perspectives of the participants through the community engagement experience. A deeper learning about community service and applying the skills and theory contributed to the adjustment of perspectives.

Likewise, Parlier et al. (2022) investigated the correlation between community service participation and the learning that the participants obtained in purposeful community service activities from the Community College Survey of Student Engagement (CCSSE) with a total of 107,000 respondents coming from 694 institutions. As per the researchers' findings, community service learning and experience are significantly related to community service engagements with the interaction of the teachers and active collaboration activities.

Similarly, Pak (2020) aimed to determine the long-term benefits of community service learning on Spanish students who engaged in different levels of Spanish courses and recognized the aspects of their community service learning and experience. The findings of the research reveal that students' academic and community service learning and experience present a positive outcome and attitudes toward communicating with the target language in communities. It led to positive attainment of the knowledge, attitude, and behavior of the participants. The majority also noted that the community service-learning participation was the notable educational and community involvement they had in college.

To negate previous studies, Dienhart et al. (2016) studied the impacts of mandatory service on students in service-learning classes where the results revealed that participants' initiative and motivation lessened as the external incentive process took place. The impact of community service-learning activities declined as it was a form of requirement for graduation.

The RCC is one of the higher educational institutions that encourages the participation of students in different community service activities. Through engagement with community service activities, the school aims to attain the "The total development of man based on Faith, Science, and Virtue" which is the philosophy – the RCC is lived up to. She professes her noble commitment to developing an integral person whose head, heart, and action are congruent through a well-rounded education. An education that emphasizes not only the intellectual but also the physical, social, emotional, and moral/spiritual development of man is summed up in Faith, Science, and Virtue (RCC College Student Handbook, 2017).

The Faith, Science, and Virtue in the context of the statement in the RCC philosophy, "*Faith* refers to our belief in the existence of a just and loving God. We believe that faith in God gives meaning and purpose to human life. Faith also means belief in our teachers, and their capability to facilitate learning and to bring out the best in our students. We likewise believe in ourselves, in our ability to learn and imbibe knowledge, in our inherent goodness as persons, and therefore, in our ability to live moral lives. *Science* refers to our constant search for knowledge and pursuit of academic excellence through scientific processes, well-planned curricula, efficient and effective instruction and support services, and research. *Virtue* refers to our conviction that since we are inherently good, we can develop moral values through strong determination and perseverance" (RCC College Student Handbook, 2017).

With this philosophy in mind, several activities and requirements are given to the students throughout their educational journey that will contribute to their total development as a person. Among these requirements is students' engagement with community service (RCC College Student Handbook, 2017).

The RCC Community Extension Service Office (CESO) is an office in charge of monitoring the community service activities of the students. This office is also established to provide opportunities for the members of the RCC to exemplify the spirit of concern in bringing assistance to the underprivileged community through outreach programs and activities (CESO Manual, 2017). Through the community service requirement, students who are the predominant members of the school serve as the main partners of the RCC-CESO in conducting community extension programs ranging from community organization, health and sanitation, education and values formation, livelihood, social and cultural, environment and cleanliness, sports and recreation, and research. This strategy is supported by Braverman et al. (2014) who pointed out that extension programs and undergraduate students are naturally suited to each other in many respects, and getting students involved with extension activities can provide mutual benefits for both the programs and students' educational development. Many undergraduates are eager to spend some of their educational time outside of the classroom, in real-life settings where they have a chance to make a difference in the lives of families and communities. Extension programs, for their part, can be enriched by the energy, creativity, and perspective that many college students can provide. Additionally, Brennan et al. (2007) mentioned that extension plays a vital role in engaging youth through interactions with the local community. Youth can actively contribute to a variety of Extension activities that enhance local life. If youth are included in programs to meet the needs and empower communities, they can become lifelong participants and take on a sense of ownership in development efforts.

Furthermore, community service provides an avenue for the students to serve the community, apply what they have learned from the school, and in return, learn through their experiences. Schmiesing et al. (2005) pointed out that the volunteers' experience in community service has significant benefits that include stronger social networks, healthier lifestyles, improved interpersonal relationships as well as improved self-confidence, self-esteem, and working relationships with others. Other studies have

described benefits as learned leadership skills that include networking, listening, communication, problem-solving, and collaboration skills (Singletary et al., 2005). Furthermore, the study of Diem and Nikola (2005) informed that community service experiences teach volunteers the interpersonal and group relational skills needed to become effective community leaders.

Indeed, studies have proven the benefits of engaging students with community service. However, the researcher would like to investigate further how it would help in the attainment of the "total development of man based on faith, science, and virtue" – the philosophy of RCC. Since college students are highly encouraged to engage in community service, this should have direct significance in the achievement of the reason why RCC exists. The experiences and the learning that the students gained through their engagement with this endeavor are worthwhile information that would help the researcher investigate its relevance to the achievement of school philosophy.

Conceptual Framework

Figure 1 shows the paradigm of the study in an input-process-output model. The *input* includes the survey of the community service engagement of the students during their college education in RCC. The community engagement or involvement of the students may be through the spearheaded activities of the CESO in its eight (8) programs, namely: community organization, health and sanitation, education and values formation, livelihood, social and cultural, environment and cleanliness, sports and recreation, and research (CESO Manual, 2017). This may also be through their involvement in the community service activities spearheaded by the recognized student organizations in RCC like the Youth Community Service Club (YCSC), Student Catholic Action (SCA), Supreme Student Council (SSC), Department Student Council (DSC), and other organizations outside the school that are aligned with the eight (8) programs of the CESO. The input also includes the survey on the impact of the community service engagement of the students in their learning and development in terms of faith, science, and virtue – the philosophy of RCC.

The *process* includes the data analysis of the quantitative data through the use of statistical software to determine the learning and development of the students through their engagement in community service toward the attainment of faith, science, and virtue.

The *output* includes the students' learning in the conduct of community service, and their development toward achieving RCC's philosophy in terms of faith, science, and virtue.

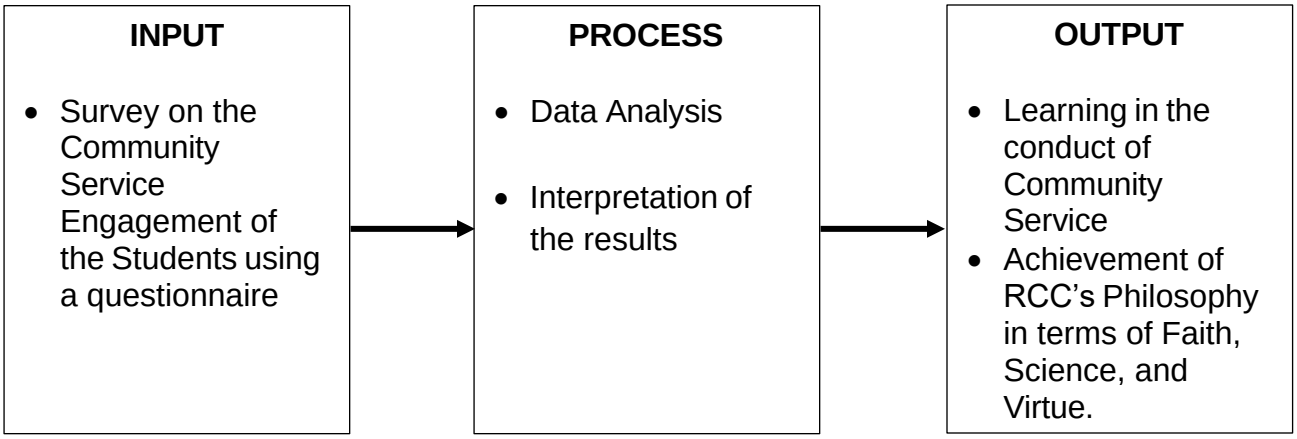


Figure 1. *Impact of Engagement with Community Service on the Student's Learning and Development Toward Achievement of RCC's Philosophy*

Research Questions

This study aimed to determine the impact of engagement with community service on students' learning and development toward achieving RCC's philosophy of faith, science, and virtue. Specifically, it sought to:

1. Describe the participants' community service activities;
2. Describe the participants' learning with their engagement in community service; and
3. Determine the development of the participants in terms of faith, science, and virtue with their engagement in community service.

METHODOLOGY

This study made use of the descriptive-survey method of research to determine the students' community service activities, learning, and their assessment of how their development in terms of faith, science, and virtues was achieved. The participants of the study were 129 college graduates from batch 2019 and 100 college graduates from batch 2023 for a total of 229 participants. The batch 2019 is the last batch of graduates before the implementation of the K-12 curriculum in the Philippines and they are the last batch before the COVID-19 pandemic. The batch 2023 was the latest graduate of the college after the COVID-19 pandemic. The participants were composed of 158 or 69% females and 71 or 31% males with the majority of them in the programs of Bachelor of Secondary Education (BSEd), Bachelor of Elementary Education (BEEd), Bachelor of Science in Business Administration (BSBA), and Bachelor of Science in Civil Engineering (BSCE). Table 1

Profile of the Respondents

Graduation Batch	**f**	**%**
Batch 2019	129	56.3
Batch 2023	100	43.7
Total	229	100.0
Sex	**f**	**%**
Male	158	69.0
Female	71	31.0
Total	229	100.0
Course	**f**	**%**
Bachelor of Arts in English Language (ABEL)	6	2.6
Bachelor of Elementary Education (BEEd)	38	16.6
Bachelor of Science in Accountancy (BSA)	13	5.7
BS Business Administration (BSBA)	44	19.2
BS Civil Engineering (BSCE)	31	13.5
Bachelor of Secondary Education (BSEd)	75	32.8
BS Hospitality Management (BSHM)	11	5
BS Information Technology (BSIT)	5	2.2
BS Tourism Management (BSTM)	6	2.6
Total	229	100.0

The instrument used in this study was a researcher-made questionnaire. It was subjected to content validation by the Research Director, Vice President for Academic Affairs, and Dean of one of the higher educational institutions in Angeles City. Before the data gathering, the questionnaire was pilot-tested to 30 students. The questionnaire was composed of three (3) parts: Part 1 was about the details of community service participated and or conducted by the students; Part 2 was about the learning of the students in the conduct of community service which was composed of ten items answerable using a 4-point scale of Strongly Agree (4), Agree (3), Disagree (2), and Strongly Disagree (1); and Part 3 was about the development of the students based on faith (5 items), science (5 items), and virtue (5 items) answerable using a 5-point scale of to a Very Great Extent (5), to a Great Extent (4), to a Moderate Extent (3), to a Slight Extent (2), and Not at All (1).

The frequency (*f*), percentage (%), rank, and mean ($\bar{x}$) values were used in the analyses and interpretations of data. To facilitate the interpretation of the mean ($\bar{x}$) score of the responses, the following were adopted:

Description of students' learning

Mean*	Descriptive Interpretation
1.00 – 1.49	Strongly Disagree
1.50 – 2.49	Disagree
2.50 – 3.49	Agree

3.50 – 4.00	Strongly Agree

Description of students' development in faith, science, and virtue

Mean*	Description
1.00 – 1.49	Not at All
1.50 – 2.49	to a Slight Extent
2.50 – 3.49	to a Moderate Extent
3.50 – 4.49	to a Great Extent
4.50 – 5.00	to a Very Great Extent

** based on the rule of rounding off of numbers*

RESULTS

The data gathered were organized and processed using the appropriate statistical tools and techniques which revealed the following results:

Students Community Service Activities

The type of community service activities participated by the students are presented in Table 2. The result showed that the social and cultural ranked first among the community service where the students were commonly engaged followed by education and values formation (ranked 2), health and sanitation (ranked 3), and environment and cleanliness (ranked 4). The students were also engaged in community service activities related to sports and recreation, community organization, livelihood, and research.

Table 2

Rank Distribution of the Community Service Activities of the Participants

Type of Community Service Activities	f	Rank
Community Organization	140	6
Health and Sanitation	360	3
Education and Values Formation	385	2
Livelihood	120	7
Social and Cultural	460	1
Environment and Cleanliness	230	4
Sports and Recreation	180	5
Research	68	8

Learning in the Conduct of Community Service

Table 3 presents the learning of the participants through their engagement with community service activities. The results revealed that they strongly agree that their engagement with community service activities opened their eyes to the conditions of people in society ($\bar{x}$ = 3.87); they gained a better understanding of the needs of others ($\bar{x}$ = 3.86); they realized that they were more blessed than others ($\bar{x}$ = 3.86); they were inspired and motivated to continuously improve their life ($\bar{x}$ = 3.83); they gained a better understanding of people ($\bar{x}$ = 3.82); encouraged doing more community service to other people ($\bar{x}$ = 3.79); they felt the true feeling of happiness ($\bar{x}$ = 3.78); they have gained a better understanding of themselves ($\bar{x}$ = 3.73); they gained life skills that they will use in the future ($\bar{x}$ = 3.71); and they have been able to apply their academic learning in a practical setting ($\bar{x}$ = 3.69).

Table 3

Mean Distribution of Participants' Learning in the Conduct of Community Service

Through engagement in community service	Mean	Description
1. I have gained a better understanding of people.	3.82	Strongly Agree
2. I have gained a better understanding of myself.	3.73	Strongly Agree
3. I have gained a better understanding of the needs of others.	3.86	Strongly Agree
4. I have gained life skills that I will use in the future.	3.71	Strongly Agree
5. I have been able to apply my academic learning in a practical setting.	3.69	Strongly Agree
6. I realized that I am more blessed than others.	3.86	Strongly Agree
7. I felt the true feeling of happiness.	3.78	Strongly Agree
8. I encouraged doing more community service to other people.	3.79	Strongly Agree
9. I was inspired and motivated to continuously improve my life.	3.83	Strongly Agree
10. It opened my eyes to the conditions of people in society.	3.87	Strongly Agree
Overall mean	3.80	Strongly Agree

N=229; SD = Strongly Disagree (1.00-1.49), D = Disagree (1.50-2.49), A = Agree (2.50-3.49), SA = Stronlgy Agree (3.50-4.009)

Development of the Participants in terms of Faith, Science, and Virtue through Engagement with Community Service Activities

Table 4 presents the participants' development in terms of Faith, Science, and Virtue through engagement with community service activities. On *faith*, the results showed that the students strengthened to a very great extent their faith in God ($\bar{x}$ = 4.76); they realized to a very great extent their responsibility of being in service to other people especially those who are in need ($\bar{x}$ = 4.75); they developed to a very great extent to uphold truth, peace, justice and solidarity by respecting gender, cultural, religious and political differences ($\bar{x}$ = 4.71); they became aware of the socio-economic, political, cultural and moral aspects of the society thus enabling them to organize and lead activities that contribute meaningfully to the progress and development of the environment and the community ($\bar{x}$ = 4.64); and they acquired to a very great extent the knowledge, skills and proper attitude in analyzing, planning, monitoring, and evaluating outreach projects ($\bar{x}$ = 4.61). In general, through the students' engagement with community service, they developed to a very great extent ($\bar{x}$ = 4.69) the values of faith in the philosophy of RCC.

On *science*, the participants rated four indicators to a very great extent. They have developed a positive attitude in performing their tasks satisfactorily ($\bar{x}$ = 4.63); they have developed their skills of communicating with people in a way that earns their respect and trust, thereby encouraging a cooperative and productive workplace that is conducive to the achievements of professional or assigned goals ($\bar{x}$ = 4.59); they have critically contemplated problems and issues and think of solutions that contribute to a better understanding of the community ($\bar{x}$ = 4.53); and they have developed critical, analytical, and creative thinking in meeting current and emerging needs of society ($\bar{x}$ = 4.50). However, the participants have developed to a great extent their proficiency in linguistic competence and communicative performance ($\bar{x}$ = 4.41). In general, through the students' engagement with community service, they developed to a very great extent ($\bar{x}$ = 4.53) the values of science in the philosophy of RCC.

The third indicator of the school's philosophy is *virtue*. The result showed a rating of "to a very great extent" in all indicators of the development of the virtue through their engagement with community service activities. To a very great extent, the participants claimed that they have developed a respect for others regardless of their status in life ($\bar{x}$ = 4.77); they have developed the willingness to take risks in initiating a meaningful change ($\bar{x}$ = 4.66); they have developed their skills in working effectively with other people ($\bar{x}$ = 4.62); they have developed the habit of active participation in providing community service, particularly to the underserved members of society ($\bar{x}$ = 4.61); and they have strived to be a leader upholding universal values seeking to serve rather than to be served ($\bar{x}$ = 4.54). In general, through the students' engagement with community service, they have developed to a very great extent ($\bar{x}$ = 4.64) the values of virtue in the philosophy of RCC.

In general, the development of the participants through their engagement with community service activities was achieved to a very great extent the faith ($\bar{x}$ = 4.69), science ($\bar{x}$ = 4.53), and virtue ($\bar{x}$ = 4.64) with an overall mean of 4.62.

Table 4

Mean Distribution of Participants' Development in terms of Faith, Science, and Virtue through their Engagement Community Service Activities

FAITH	Mean	Description
1. I have strengthened my faith in God.	4.76	To a Very Great Extent
2. I have realized my responsibility of being in service to other people especially those who are in need.	4.75	To a Very Great Extent
3. I became aware of the socio-economic, political, cultural, and moral aspects of the society thus enabling me to organize and lead activities that contribute meaningfully to the progress and development of the environment and the community.	4.64	To a Very Great Extent
4. I have acquired knowledge, skills, and a proper attitude in analyzing, planning, monitoring, and evaluating outreach projects.	4.61	To a Very Great Extent

Table 4 *(Continuation)*

FAITH	Mean	Description
5. I have developed to uphold truth, peace, justice, and solidarity by respecting gender, cultural, religious, and political differences.	4.71	To a Very Great Extent
Sub-mean	4.69	To a Very Great Extent
SCIENCE	Mean	Description
1. I have developed critical, analytical, and creative thinking in meeting the current and emerging needs of society.	4.50	To a Very Great Extent
2. I have developed proficiency in linguistic competence and communicative performance;	4.41	To a Great Extent
3. I have critically contemplated problems and issues, and think of solutions that contribute to a better understanding of the community.	4.53	To a Very Great Extent
4. I have developed my skills of communicating with people in a way that earns their respect and trust, thereby	4.59	To a Very Great Extent

encouraging a cooperative and productive workplace that is conducive to the achievement of professional or assigned goals.		
5. I have developed a positive attitude in performing my tasks satisfactorily.	4.63	To a Very Great Extent
Sub-mean	4.53	To a Very Great Extent
VIRTUE	Mean	Description
1. I have strived to be a leader upholding universal values seeking to serve rather than to be served.	4.54	To a Very Great Extent
2. I have developed my skills in working effectively with other people.	4.62	To a Very Great Extent
3. I have developed respect for others regardless of their status in life.	4.77	To a Very Great Extent
4. I have developed the willingness to take risks in initiating a meaningful change.	4.66	To a Very Great Extent
5. I have developed the habit of active participation in providing community service, particularly to the underserved members of society.	4.61	To a Very Great Extent
Sub-mean	4.64	To a Very Great Extent
Overall mean	4.62	To a Very Great Extent

N=229; Not at All (1.00-1.49), to a Slight Extent (1.50-2.49), to a Moderate Extent (2.50-3.49), to a Great Extent (3.50-4.49), to a Very Great Extent (4.50-5.00)

DISCUSSION

Students Community Service Activities

The social and cultural is the rank 1 among the community service programs where the students are engaged. Among the community service activities in this program is the cultural night presentation dubbed as the College Night for a Cause where the proceeds of the activity are allocated for the *Pamaskong Handog* – a gift-giving activity to the partner communities of RCC. This is a yearly activity in the college where the students are highly encouraged to participate in cultural affairs to gather funds for community service. The donations of the students for the victims of calamities like typhoons, volcanic eruptions, earthquakes, and those who were greatly affected by the COVID-19 pandemic were included in this program. Second in the rank among the community service activities participated by the students is the education and values formation. This includes the *tulung-dunong* program – where the college education students conducted reading, writing, and arithmetic tutorials to the pupils studying in the RCC-Sitio Babo Munting Paaralan and Inararo Learning Center. This is a year-long community service activity

where the students taking Bachelor of Elementary Education and Bachelor of Secondary Education are given a schedule to render tutorials and teaching activities to the pupils in the partner communities of RCC – the Sitio Babo, and Inararo. The college students also participated in the health and sanitation service to the community. This includes their participation in giving training to the residents, particularly to the children on proper toothbrushing, handwashing, and bathing. The distribution of slippers, soap, toothbrush, toothpaste, and other hygiene kits are included in this activity. In addition, since the RCC and partner organizations have constructed several toilets in the community, the students also provided training to the children on the proper utilization of the toilets.

Learning with the Engagement of Community Service Activities

The students who are engaged in community service strongly agree that it opens their eyes to the conditions of people in society. This is probably the fundamental learning that the participants may get through engagement with community service. They will become aware of the real-life situation of the people which will lead to their participation in community service activities. This strengthens the strategy of the Student Awareness Generates Action (SAGA) of Florida Southern College (2008), where they make the students aware of community issues through community service and such awareness leads to their involvement in the community through volunteerism and service. The students also confirm that their participation in community programs heightens their awareness of individuals who are less fortunate and helps them gain an appreciation for helping individuals in need. Furthermore, the students are more inspired and motivated to continuously improve their lives and they experience the true feeling of happiness. These results corroborate the findings of Hairston (2004) that through community service the delegates recognized the positive feelings of helping others, Bringle and Hatcher, (1995, as cited in Carlisle et al., 2020) that community engagement deepens the awareness of civic responsibility, Eyler and Giles (1999, as cited in Afzal & Hussain, 2020) that community service improves social skills, and Diem and Nikola (2005) that community service experiences teach volunteers the interpersonal and group relational skills needed to become effective community leaders.

Development of the Students in terms of Faith, Science, and Virtue through Engagement with Community Service Activities

The study shows the participants' development in terms of Faith, Science, and Virtue through engagement in community service activities. The results clearly emphasize the extent of the development of the students in terms of faith through their engagement with community service activities. They can strengthen their faith in God and realize their responsibility of being in service to other people especially those who are in need. The result indicates that the respondents' sense of empathy and sympathy for others has been positively developed. Through community service, the students develop a greater awareness of the situations of the people in the community. This fosters volunteers' sense of caring for others. As Perry and Katula (2001) found out, community service engagement is positively associated with efficacy, self-confidence, and feelings of responsibility for the well-being of others. Accordingly, Scales et al. (2001) stated that

through students' participation in community service learning, they manifested greater concern for the welfare of other persons and they sustained it throughout their studies than students without community service learning.

In addition, the results show that the philosophy of RCC in terms of science has been greatly developed with the college students through their engagement in community service activities. This shows that the respondents' knowledge in performing their tasks satisfactorily, skills in communicating with people, providing solutions to the problems of the community, and proficiency in linguistic competence and academic performance have been greatly developed. As *science* in the context of the philosophy of RCC refers to the constant search for knowledge and pursuit of academic excellence, the result is indicative that this context has been achieved through community service. Since community service is a social activity, the students' interactions with people provide them with experiences that they can use in the pursuit of academic excellence. Soria et al. (2012) mentioned that community service as a programmatic and intentional activity has the potential to impact both the social and academic domains of the experiences of college students. Students can use their learning from their experiences and integrate their new-found knowledge into their academic pursuits. In turn, community service helps students develop a connection between theory-driven academic studies and foster connections to real-life practice. Furthermore, Astin et al. (2000) in their longitudinal study in higher education, provide evidence that community service has positive effects on the cognitive and psychosocial development of the students, thus it positively contributes to their academic performance.

The third indicator of the school's philosophy is *virtue*. The participants rated all indicators to a very great extent on their development. This showed that the participants have greatly developed their respect for others regardless of their status in life; have the habit of actively participating in providing community service, particularly to the underserved members of society; and strive to be leaders upholding universal values seeking to serve rather than to be served. As *virtue* in the context of the philosophy of RCC refers "to our conviction that since we are inherently good, we can develop moral values through strong determination and perseverance," the result indicates that students' participation in community service activities achieved this purpose. Community service is service done for the benefit of other people for free. This requires determination and perseverance to help others considering the risks and untoward situations in the community. Persevering to participate in community service is a reflection of the personal character of the volunteers that are aligned with moral values and proper behavior. According to Weider (2005), the character and moral development of students is of immense interest to educators, and how community service can impact this development since it cannot be ascribed to ethics class alone. Boss (1994, cited in Weider 2005) found that the student's moral reasoning ability improves when students engage in community service. She further discovered that the students who engaged in community service projects with problem-solving activities that included moral issues enhanced the moral development of the students to the greatest.

In general, the result reveals that the philosophy of RCC which is a total development of man based on faith, science, and virtue is achieved to a very great extent

through the engagement of the students with community service activities. The RCC students who are engaged in community service strengthen their *faith* in God and believe in themselves that they can live moral lives by being of service to other people especially those who are in need. The *science* which is a constant search for knowledge and pursuit of academic excellence is inculcated in the students through engagement with service-learning activities like education and values formation, health and sanitation, community research, and the like that have proven significance to strengthen students' understanding in subject matter or course content (Mahoney & Schamber, 2011, as cited in Kingston et al., 2014; Smith, 2021), which led to improved academic performance of the students (Afzal & Hussain, 2020; Parlier et al., 2022; Wood & Harris, 2015). Further, the result reveals that the third indicator of RCC Philosophy which is *virtue* is also achieved to a very great extent through the students' engagement with community service activities. The conviction that the students are inherently good is manifested through giving service and helping others for free exemplifying their moral values and development.

Based on the foregoing, the results provide significant information that the engagement of the RCC college students with community service activities helps to a very great extent the achievement of the philosophy of RCC which is a "total development of man based on faith, science, and virtue." The results also prove that community service as an educational requirement has direct significance in the achievement of the reason why RCC exists – its philosophy. Thus, through engagement with community service, the RCCians can be greatly developed to become well-rounded graduates based on Faith, Science, and Virtue.

Conclusions

Based on the foregoing, the following conclusions were drawn:

1. The college students of RCC are mostly engaged in community service activities in terms of social and cultural, education and values formation, health and sanitation, environment and cleanliness, and sports and recreation while they are less engaged in community organization, livelihood, and research.

2. The students strongly agree that engagement in community service activities opens their eyes to the conditions of people in society, they gain a better understanding of the needs of others, they realize that they are more blessed than others, they are inspired and motivated to continuously improve their life, and they gain a better understanding of people.

3. Through the students' engagement in community service activities, their development based on faith, science, and virtue is achieved to a very great extent. This demonstrates their characteristics as true RCCians.

Recommendations

1. The engagement of the students with community service activities has been found instrumental in the achievement of the philosophy of RCC which is a total development of man based on Faith, Science, and Virtue, thus it is hereby recommended that the engagement of the college students with community service activities should be strengthened and sustained.

2. The Community Extension Service Office of RCC and other organizations should provide more activities related to community organization, livelihood, and research to improve the participation of the students in these programs.

3. For future research, explore the correlation of the length of engagement and type of community service activities of the students to their learning and development.

Compliance with Ethical Standards

The study was supported by the Office of Community Extension Service Office of Republic Central Colleges. The author declares that he has no conflicts of interest. All procedures performed involving humans were under the ethical standards of the RCC Ethics Board. Informed consent was obtained from all individual participants involved in the study. Plagiarism was strictly avoided, there was no bias in the interpretation of the results, and the data was used purely for research.

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POLYGONAL NUMBERS: NEW PERSPECTIVE

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ABSTRACT

The investigators were able to come up with this study because of the inspiration from the different sequences learned from grade 10 and in the Pre-Calculus subject in this school year. They were motivated to make another type of sequence and they thought of creating a sequence from polygons. The investigation used an inductive theory development that involved searching for patterns from observations and developing formulas of the nth term from those patterns. It was found out that there were sequences formed and from those patterns, the researchers were able to form and validate three formulas. The formulas where s represents the number of matchsticks used as a perimeter of the first polygon formed and n is the number of terms are: first is $(s-2)n^2 = a_n$, for the number of equilateral triangles formed; second is $\frac{3(s-2)n^2 + sn}{2} = a_n$, for the number of matches used is:, and third is $\frac{(s-2)n^2 + sn + 2}{2} = a_n$, for the number of intersections of the matchsticks found in a polygon, which were confirmed applicable in finding the nth term of any polygon formed by m number of matchsticks.

Keywords: *Sequences, Polygons, Patterns, Formulas, Equilateral triangles, Matchsticks, Perimeter, Intersection*

INTRODUCTION

In number theory, there are different kinds of sequences and one of these is a number sequence. According to Eather (2014), a number sequence is an ordered set of numbers arranged according to a rule. In the history of Mathematics, many sequences were discovered such as; arithmetic sequences, geometric sequences, Fibonacci sequences, and harmonic sequences. Because of these discoveries, the researchers were inspired to make another type of sequence and they thought of creating a sequence from polygons.

Polygonal numbers are numbers representing dots that are arranged into a geometric figure. Starting from a common point and augmenting outwards, the number of dots utilized increases in successive polygons, (Betancourt and Park, 2009).

According to Betancourt and Park (2009), the idea of polygonal numbers was first discovered by the Greek mathematician Hypsicles in the year 170 BC. Hypsicles as the author of the polygonal numbers concluded that the nth *n*-gon can be calculated using the formula $\frac{n[2+(n-1)(n-2)]}{2}$. He used this formula to determine the number of elements in the nth term of a polygon with a side. Before Hypsicles, there are evidences that Greek mathematicians used such figurate numbers to create their theories. One polygonal of these was found by Pythagoras, Pythagorean's theorem, where he discovered that the area of the square built upon the hypotenuse of a right triangle is equal to the sum of the areas of the squares upon the remaining sides (Morris, 2019) establishing a formula $a^2+b^2=c^2$ where a, b and c are measurements of the two adjacent sides and the hypotenuse respectively (Chipalata, 2004), which is commonly used in the study of geometry today.

Some mathematical formulations have deep roots in polygonal numbers and several famous theorems are based on these numbers such as Mersenne prime, Fermat numbers, Fibonacci sequence, Lucas numbers, Pascal's triangle, and binomial theorem, and others which are applied in our modern mathematics.

According to Hosch (2019), in number theory, Mersenne prime is a prime number of the form $2^n - 1$ where *n* is a natural number where these primes are a subset of the Mersenne numbers, M_n. The numbers are named for the French theologian and mathematician Marin Mersenne, who asserted in the preface of *Cogitata Physica-Mathematica* (1644) that, for $n \leq 257$, M_n is a prime number only for 2, 3, 5, 7, 13, 17, 19, 31, 67, 127, and 257. The list contained two numbers that produce composite numbers and omitted two numbers that produce primes. The corrected list is 2, 3, 5, 7, 13, 17, 19, 31, 61, 89, 107, and 127, which was not determined until 1947. This shadowed the work of various mathematicians through the centuries, starting with the Swiss mathematician Leonhard Euler, who first verified in 1750 that 31 produces a Mersenne prime.

The researchers will be investigating a new polygonal number sequence using matchsticks, forming polygons, and connecting the intersections using more matchsticks. The researchers hypothesize that they can form three sequences that have not yet been investigated. For them, it needs an investigation because despite of many investigations and results on various kinds of polygonal number sequences, there are no results that can be found for these number sequences.

Objectives of the Study

The researchers aimed to achieve the following objectives;

1. Investigate and form a polygonal sequence using matchsticks focusing on;
   1.1 number of equilateral triangles inside the polygon,
   1.2 number of matchsticks used, and
   1.3 number of intersections of the matchsticks
2. Create a formula for the nth term of sequences formed.

METHODOLOGY

Materials:

- Matchsticks
- Illustration board
- Glue
- Paper and pencil
- Calculator

General Procedure:

The investigators will be using an inductive theory development which involves searching for patterns from observations and development of formulas of the nth term for those patterns. First, using matchsticks the investigators will form different polygons (from 3-sided to 5-sided) with one matchstick as the length of its side and connect the intersections of matchsticks using another matchstick to form equilateral triangles and will observe how many matchsticks will be used, how many equilateral triangles will be formed and how many points of intersections (dots) will be determined. Second, using other matchsticks the investigators will form the same shapes of polygons but this time the sides will be added with one matchstick then the same process will be done. The procedure will be repeated until the investigators can form a polygon with 5 matchsticks as the length. From the recorded data the investigators will have three patterns and from those patterns, three theories for finding the nth term can be formed.

RESULTS AND DISCUSSION

Derivation for the formula on the number of equilateral triangles formed inside a polygon

A. Polygon with perimeter of 3m where m is a positive integer

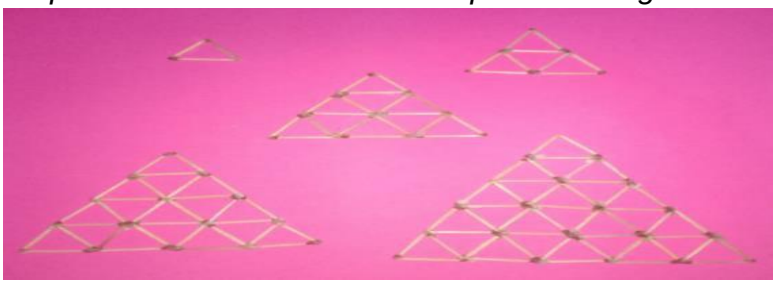


Figure 1. Polygon with perimeter $= 3m, m \in Z^+$

Using the sequence formed with the number of triangles in a polygon with perimeter = $3m, m \in Z^+$, the researchers constructed a sequential formula. The result is as follows:

Table 1. Polygonal Sequence formed from the number of equilateral triangles in a Polygon with a Perimeter of $3m, m \in Z^+$

	a_1	a_2	a_3	a_4	a_5
No. of equilateral triangles	1	4	9	16	25

1st difference: 4-1 = **3**, 9-4 = **5**, 16-9 = **7**, 25-16 = **9**
2nd difference: 5-3 = **2**, 7-5 = **2**, 9-7 = **2**

As we can see in the sequence, the second difference is a constant of 2. Therefore, the researchers came up with using a quadratic sequence in the form $an^2 + bn + c$. The quadratic sequence is a sequence of numbers in which the second difference between any two consecutive terms is constant. Through this form, we substituted the value of n where n represents the term in the sequence, and equate each term with the equivalent number of triangles. We use the values of n = 1, 2, and 3.

$an^2 + bn + c = a_n$

$a(1)^2 + b(1) + c = 1$ $\quad a + b + c = 1 \longrightarrow$ eq. 1
$a(2)^2 + b(2) + c = 4$ $\quad 4a + 2b + c = 4 \longrightarrow$ eq. 2
$a(3)^2 + b(3) + c = 9$ $\quad 9a + 3b + c = 9 \longrightarrow$ eq. 3

Finding the values of *a*, *b*, *c*, using the system of linear equations in 3 unknowns, the researchers came up with

$n^2 = a_n$ $\longrightarrow$ Formula for the number of equilateral triangles formed inside a polygon with perimeter of $3m, m \in Z^+$

B. Polygon with perimeter of 4m where m is a positive integer

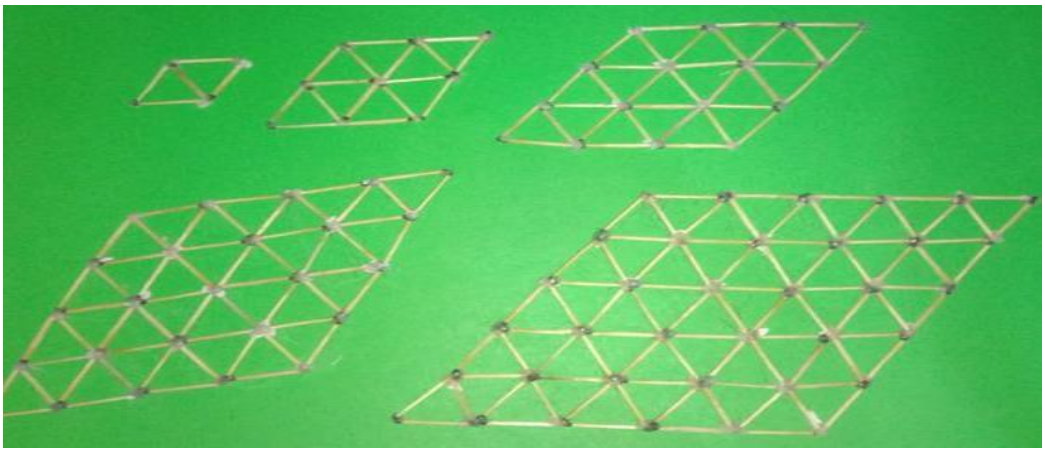


Figure 2. Polygon with perimeter = $4m, m \in Z^+$

Using the sequence formed with the number of triangles in a polygon with perimeter = $4m, m \in Z^+$, the researchers constructed a sequential formula. The result is as follows:

Table 2. Polygonal Sequence formed from the number of equilateral triangles in a Polygon with Perimeter of $4m, m \in Z^+$

	a_1	a_2	a_3	a_4	a_5
No. of equilateral triangles	2	8	18	32	50

1st difference: 8-2 = **6**, 18-8 = **10**, 32-18 = **14**, 50-32 = **18**
2nd difference: 10-6 = **4**, 14-10 = **4**, 18-14= **4**

The second difference is a constant of 4 which is twice of the second difference found in the first table and again using the quadratic sequence in the form of $an^2 + bn + c$ with n = 1, 2, and 3,

$an^2 + bn + c = a_n$

$a(1)^2 + b(1) + c = 2$ $\quad a + b + c = 2 \longrightarrow$ eq. 1
$a(2)^2 + b(2) + c = 8$ $\quad 4a + 2b + c = 8 \longrightarrow$ eq. 2
$a(3)^2 + b(3) + c = 18$ $\quad 9a + 3b + c = 18 \longrightarrow$ eq. 3

Solving the values of *a*, *b*, *c*, using the system of linear equations in 3 unknowns, the researchers came up with

$2n^2 = a_n \longrightarrow$ Formula for the number of equilateral triangles formed inside a polygon with perimeter of $4m, m \in Z^+$.

C. Polygon with perimeter of 5m where m is a positive integer

Using the sequence formed with the number of triangles in a polygon with perimeter = $5m, m \in Z^+$, the researchers constructed a sequential formula.

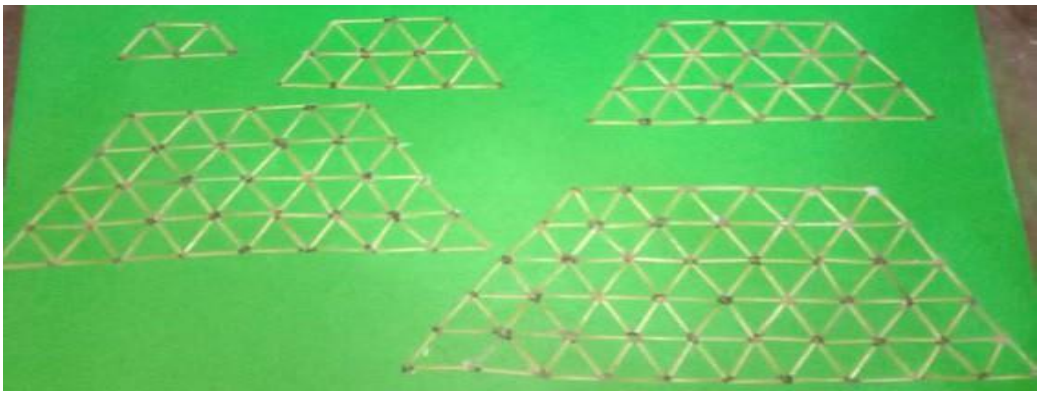


Figure 3. Polygon with perimeter = $5m, m \in Z^+$

The result is reflected in the table below.

Table 3. Polygonal Sequence formed from the number of equilateral triangles in a Polygon with Perimeter of $5m, m \in Z^+$

	a_1	a_2	a_3	a_4	a_5
No. of equilateral triangles	3	12	27	48	75

1st difference: 12-3 = **9**, 27-12 = **15**, 48-27 = **21**, 75-48 = **27**
2nd difference: 15-9 = **6**, 21-15 = **6**, 27-21 = **6**

With the constant difference of 6 which is thrice of the second difference found in the first table, still using the quadratic sequence in a form of $an^2 + bn + c$ with n = 1, 2, and 3.

$an^2 + bn + c = a_n$

$a(1)^2 + b(1) + c = 3$ $\quad a + b + c = 3 \longrightarrow$ eq. 1
$a(2)^2 + b(2) + c = 12$ $\quad 4a + 2b + c = 12 \longrightarrow$ eq. 2
$a(3)^2 + b(3) + c = 27$ $\quad 9a + 3b + c = 27 \longrightarrow$ eq. 3

Computing the values of *a*, *b*, *c*, using the system of linear equations in 3 unknowns, the researchers came up with

$3n^2 = a_n \longrightarrow$ Formula for the number of equilateral triangles formed inside a polygon with perimeter of $5m, m \in Z^+$

Summary of formulas (number of equilateral triangles formed inside the polygon):

P = $3m, m \in Z^+$ = **n^2**

P = $4m, m \in Z^+$ = **$2n^2$**

P = $5m, m \in Z^+$ = **$3n^2$**

By observing these three formulas the researchers formed a general formula for the number of equilateral triangles formed inside the polygon which is equal to $(s-2)n^2 = a_n$, where s is the number of matchsticks used as a perimeter of first polygon formed and n is the number of terms.

Verification:

Validating the formula if it is applicable for a polygon with perimeter of $6m, m \in Z^+$ for term 1: s = 6 and n = 1

$(s-2)n^2 = a_n$

$(6-2)(1)^2 = a_1$

$4(1) = a_1$

$4 = a_1$

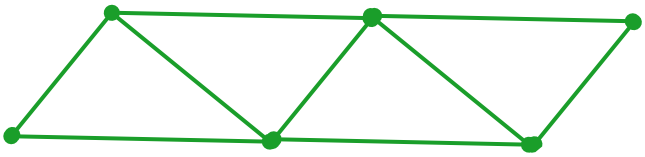


Figure 4. Polygon with perimeter = 6 by 1 matchsticks

It means there are 4 equilateral triangles formed inside a polygon with perimeter of 6 by 1 matchsticks.

For term 2:

s = 6 and n = 2

$(s-2)n^2 = a_n$

$(6-2)(2)^2 = a_2$

$4(4) = a_2$

$16 = a_2$

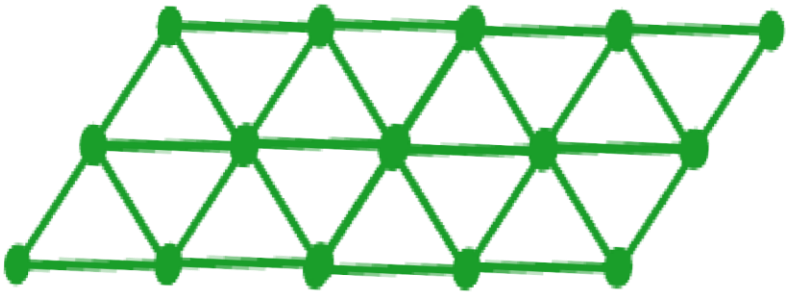


Figure 5. Polygon with perimeter = 6 by 2 matchsticks

This means there are 16 equilateral triangles formed inside a polygon with perimeter of 6 by 2 matchsticks.

For term 3:

s = 6 and n = 3

$(s-2)n^2 = a_n$

$(6-2)(3)^2 = a_3$

$4(9) = a_3$

$36 = a_3$

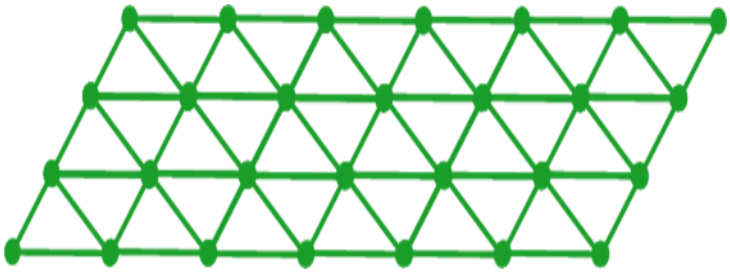


Figure 6. Polygon with perimeter = 6 by 3 matchsticks

It means that there are 36 equilateral triangles formed inside a polygon with a perimeter of 6 by 3 matchsticks.

Since it is verified that the formula is true for a polygon with a perimeter of $6m, m \in Z^+$, thus, the researchers' formula for the nth term of the sequence formed from the number of equilateral triangles formed inside the polygon is true for all polygons with perimeter of n matchsticks.

Derivation for the formula on the number of matchsticks used

A. Polygon with perimeter of 3m where m is a positive integer

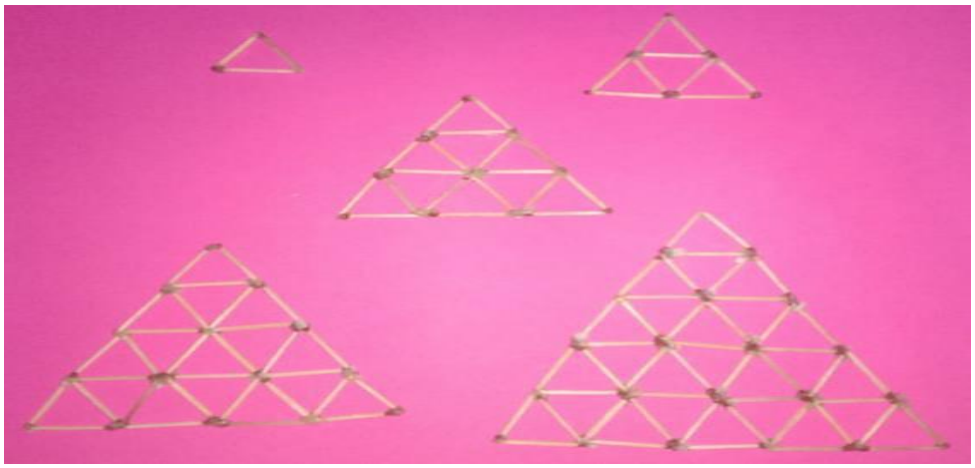


Figure 7. Polygon with perimeter = $3m, m \in Z^+$

Using the sequence formed with the number of matchsticks in a polygon with perimeter = $3m, m \in Z^+$, the researchers constructed a sequential formula. The result is as follows:

Table 4. Polygonal Sequence formed from the number of matchsticks used in a Polygon with a Perimeter of $3m, m \in Z^+$

	a_1	a_2	a_3	a_4	a_5
No. of matchsticks used	3	9	18	30	45

1st difference: 9-3 = **6**, 18-9 = **9**, 30-18 = **12**, 45-30 = **15**
2nd difference: 9-6 = **3**, 12-9 =**3**, 15-12 = **3**

The second difference is a constant of 3 and still using the quadratic sequence in the form of $an^2 + bn + c$ with n = 1, 2, and 3.

$an^2 + bn + c = a_n$

$a(1)^2 + b(1) + c = 3$ $\quad a + b + c = 3$ ⟶ eq. 1
$a(2)^2 + b(2) + c = 9$ $\quad 4a + 2b + c = 9$ ⟶ eq. 2
$a(3)^2 + b(3) + c = 18$ $\quad 9a + 3b + c = 18$ ⟶ eq. 3

Finding the values of *a*, *b*, *c*, using the system of linear equations in 3 unknowns, the researchers came up with

$3/2n^2 + 3/2n = a_n$ ⟶ **Formula for the number of matchsticks used on a polygon with perimeter of** $3m, m \in Z^+$

B. *Polygon with perimeter of 4m where m is a positive integer*

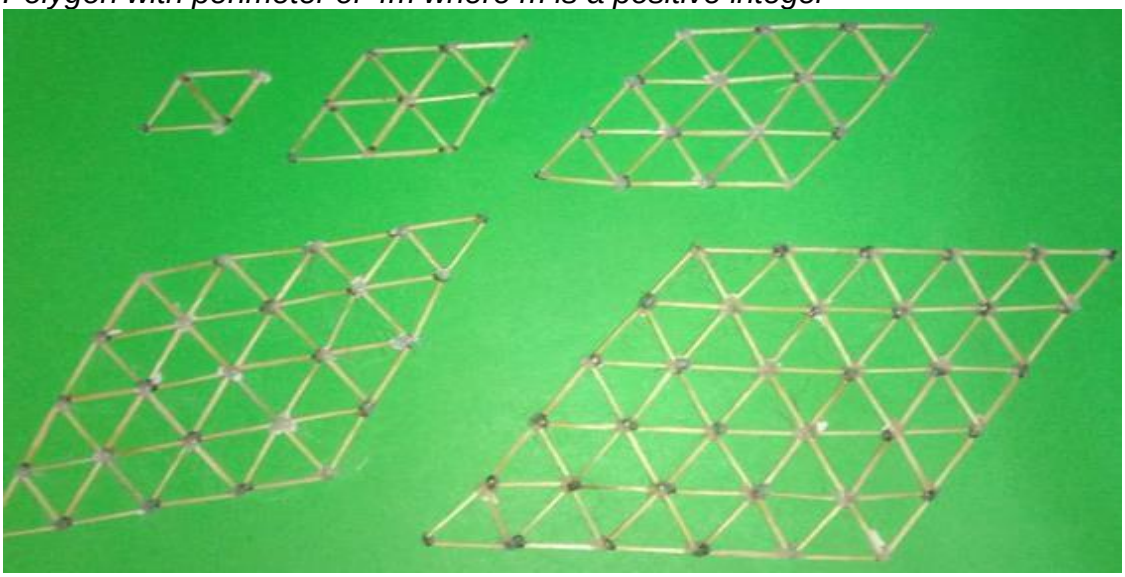


Figure 8. Polygon with perimeter = $4m, m \in Z^+$

Using the sequence formed with the number of matchsticks in a polygon with perimeter = $4m, m \in Z^+$, the researchers constructed a sequential formula. The result is presented in the table:

Table 5. Polygonal Sequence formed from the number of matchsticks used in a Polygon with a Perimeter of $4m, m \in Z^+$

	a_1	a_2	a_3	a_4	a_5
No. of matchsticks used	5	16	33	56	85

1st difference: 16-5 = **11**, 33-16 = **17**, 56-33 = **23**, 85-56 = **29**
2nd difference: 17-11 = **6**, 23-17 =**6**, 29-23 = **6**

The second difference is a constant of 6 which is twice of the second difference found in Table 4 and again using the quadratic sequence in the form of $an^2 + bn + c$ with n = 1, 2, and 3.

$an^2 + bn + c = a_n$

$a(1)^2 + b(1) + c = 5$ $\quad a + b + c = 5 \longrightarrow$ eq. 1
$a(2)^2 + b(2) + c = 16$ $\quad 4a + 2b + c = 16 \longrightarrow$ eq. 2
$a(3)^2 + b(3) + c = 33$ $\quad 9a + 3b + c = 33 \longrightarrow$ eq. 3

Solving the values of *a*, *b*, *c*, using the system of linear equations in 3 unknowns, the researchers came up with

$3n^2 + 2n = a_n$ ⟶ Formula for the number of matchsticks used on a polygon with perimeter of $4m, m \in Z^+$

C. *Polygon with perimeter of 5m where m is a positive integer*

Using the sequence formed with the number of matchsticks in a polygon with perimeter = $5m, m \in Z^+$, the researchers constructed a sequential formula.

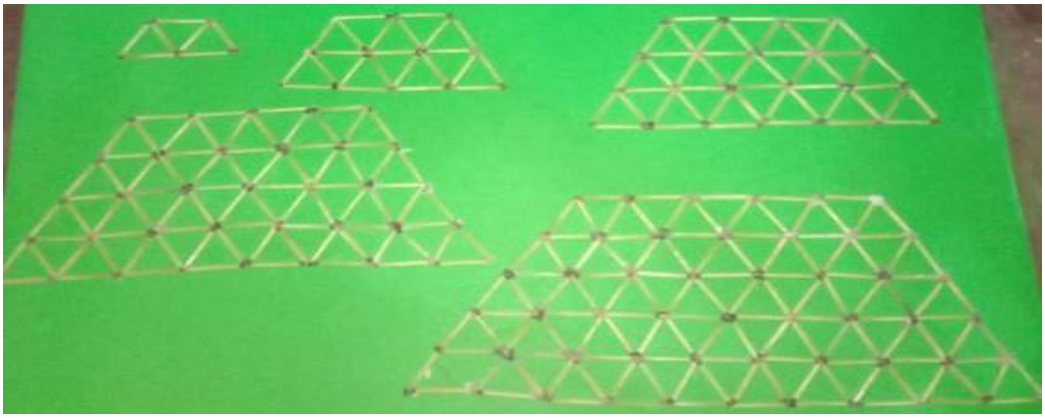


Figure 9. Polygon with perimeter = $5m, m \in Z^+$

The result is as follows:

Table 6. Polygonal Sequence formed from the number of matchsticks used in a Polygon with Perimeter of $5m, m \in Z^+$

	a_1	a_2	a_3	a_4	a_5
No. of matchsticks used	7	23	48	82	125

1st difference: 23-7 = **16**, 48-23 = **25**, 82-48 = **34**, 125-82 = **43**
2nd difference: 25-16 = **9**, 34-25 = **9**, 43-34 = **9**

With the constant difference of 9 which is thrice of the second difference found in table 4, still using the quadratic sequence in a form of $an^2 + bn + c$ with n = 1, 2, and 3.

$an^2 + bn + c = a_n$

$a(1)^2 + b(1) + c = 7$ $\quad a + b + c = 7 \longrightarrow$ eq. 1
$a(2)^2 + b(2) + c = 23$ $\quad 4a + 2b + c = 23 \longrightarrow$ eq. 2
$a(3)^2 + b(3) + c = 48$ $\quad 9a + 3b + c = 48 \longrightarrow$ eq. 3

Solving the values of *a*, *b*, *c*, using the system of linear equations in 3 unknowns, the researchers came up with

$9/2n^2 + 5/2n = a_n \longrightarrow$ Formula for the number of matchsticks used on a polygon with perimeter of $5m, m \in Z^+$

Summary of formulas (number of matchsticks used):

P = $3m, m \in Z^+ = \frac{3}{2}n^2 + \frac{3}{2}n = a_n$

P = $4m, m \in Z^+ = 3n^2 + 2n = a_n$ or $\frac{6}{2}n^2 + \frac{4}{2}n = a_n$

P = $5m, m \in Z^+ = \frac{9}{2}n^2 + \frac{5}{2}n = a_n$

By observing these three formulas the researchers formed a general formula that is equal to $\frac{3(s-2)n^2 + sn}{2} = a_n$, where *s* is the number of matchsticks used as a perimeter of the first polygon formed and n is the number of terms.

Verification:

Validating the formula if it is applicable for a polygon with a perimeter of $6m, m \in Z^+$ for term 1:

s = 6 and n = 1

$$\frac{3(s-2)n^2 + sn}{2} = a_n$$

$$\frac{3(6-2)(1)^2 + 6(1)}{2} = a_1$$

$$\frac{3(4)(1) + 6}{2} = a_1$$

$$\frac{12 + 6}{2} = a_1$$

$$\frac{18}{2} = a_1$$

$$9 = a_1$$

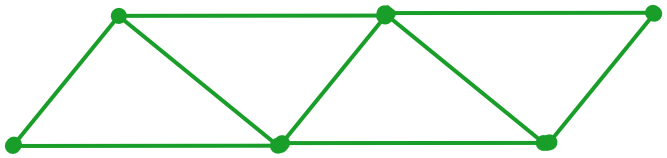


Figure 10. Polygon with perimeter = 6 by 1 matchsticks

This means that there are 9 matchsticks being used in forming a polygon with perimeter of 6 by 1 matchsticks.

For term 2:

s = 6 and n = 2

$$\frac{3(s-2)n^2+sn}{2}=a_n$$

$$\frac{3(6-2)(2)^2+6(2)}{2}=a_2$$

$$\frac{3(4)(4)+12}{2}=a_2$$

$$\frac{48+12}{2}=a_2$$

$$\frac{60}{2}=a_2$$

$$30=a_2$$

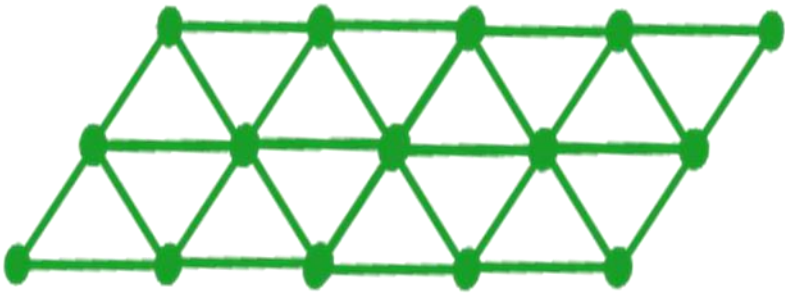


Figure 11. Polygon with perimeter = 6 by 2 matchsticks

It means to say that there are 30 matchsticks being used in forming a polygon with perimeter of 6 by 2 matchsticks.

For term 3:

s = 6 and n = 3

$$\frac{3(s-2)n^2+sn}{2}=a_n$$

$$\frac{3(6-2)(3)^2+6(3)}{2}=a_3$$

$$\frac{3(4)(9)+18}{2}=a_3$$

$$\frac{108+18}{2}=a_3$$

$$\frac{126}{2}=a_3$$

$$63=a_3$$

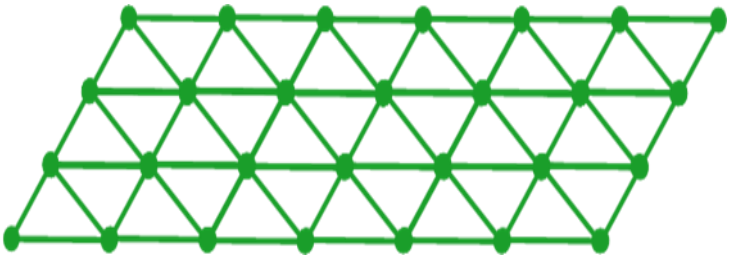


Figure 12. Polygon with perimeter = 6 by 3 matchsticks

It means that there are 63 matchsticks being used in forming a polygon with perimeter of 6 by 3 matchsticks.

Since it is verified that the formula is true for a polygon with perimeter of $6m, m \in Z^+$, thus, the researchers' formula for the nth term of the sequence formed from the number of matchsticks used is true for all polygons with perimeter of n matchsticks.

Derivation for the formula on the number of intersections of the matchsticks

A. Polygon with perimeter of 3m where m is a positive integer

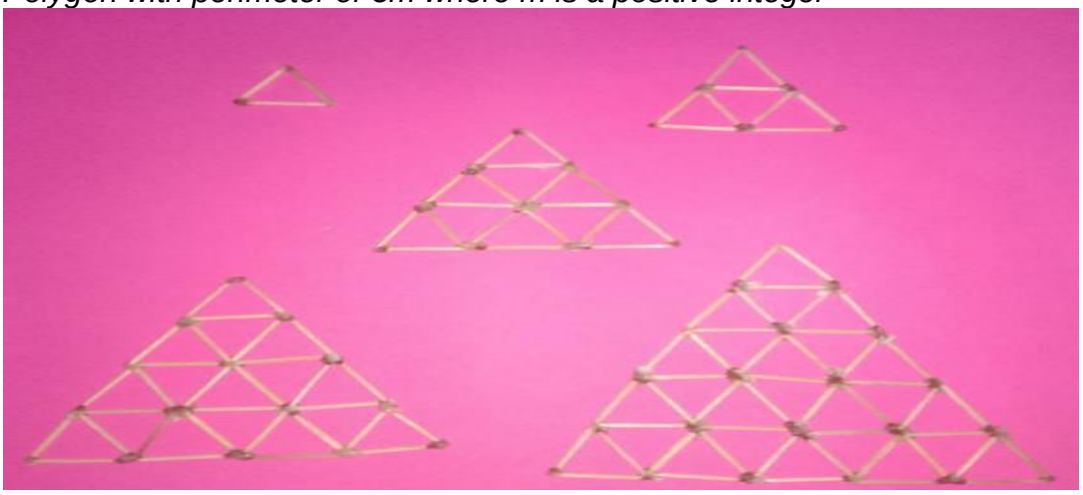


Figure 13. Polygon with perimeter = $3m, m \in Z^+$

Using the sequence formed with the number of intersections of the matchsticks in a polygon with perimeter = $3m, m \in Z^+$, the researchers constructed a sequential formula. The result is as follows:

Table 7. Polygonal Sequence formed from the number of intersections of the matchsticks used in a Polygon with Perimeter of $3m, m \in Z^+$

	a_1	a_2	a_3	a_4	a_5
No. of intersections of matchsticks	3	6	10	15	21

1st difference: 6-3 = **3**, 10-6 = **4**, 15-10 = **5**, 21-15 = **6**
2nd difference: 4-3 = **1**, 5-4 = **1**, 6-5 = **1**

The second difference is a constant of 1 and still using the quadratic sequence in a form of $an^2 + bn + c$ with n = 1, 2, 3.

$an^2 + bn + c = a_n$

$a(1)^2 + b(1) + c = 3$ $\quad a + b + c = 3$ $\longrightarrow$ eq. 1
$a(2)^2 + b(2) + c = 6$ $\quad 4a + 2b + c = 6$ $\longrightarrow$ eq. 2
$a(3)^2 + b(3) + c = 10$ $\quad 9a + 3b + c = 10$ $\longrightarrow$ eq. 3

Solving the values of *a*, *b*, *c*, using the system of linear equations in 3 unknowns, the researchers came up with

$\frac{n^2 + 3n + 2}{2} = a_n \longrightarrow$ **Formula for the number of intersections of matchsticks used on a polygon with perimeter of** $3m, m \in Z^+$

B. Polygon with perimeter of 4m where m is a positive integer

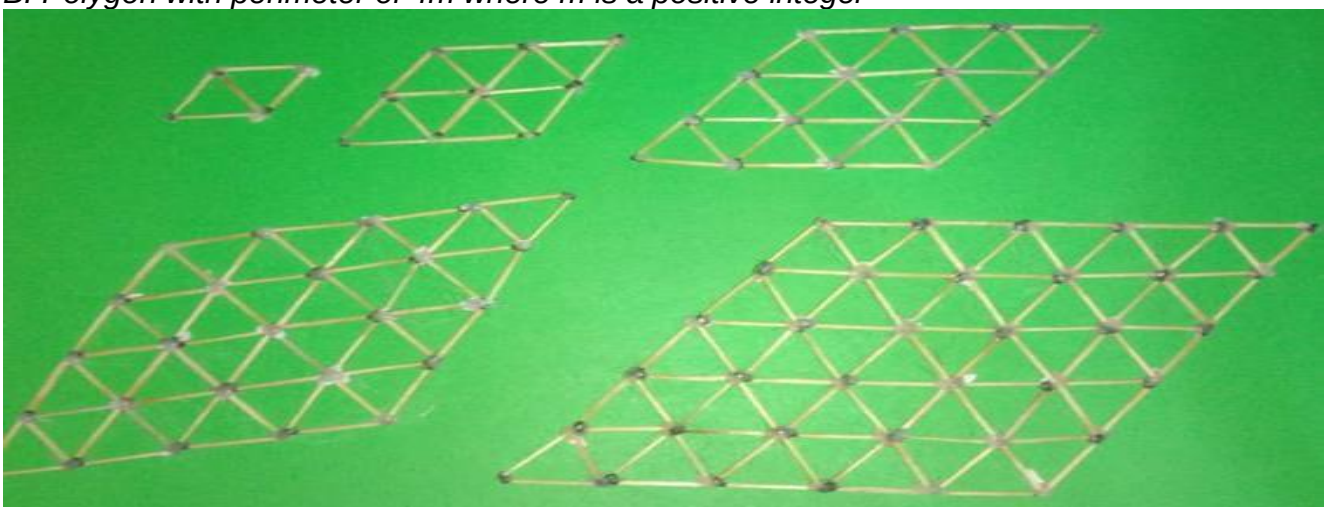


Figure 14. Polygon with perimeter = $4m, m \in Z^+$

Using the sequence formed with the number of intersections in a polygon with perimeter = $4m, m \in Z^+$, the researchers constructed a sequential formula.

The result is reflected on the table.

Table 8. Polygonal Sequence formed from the number of intersections of the matchsticks used in a Polygon with Perimeter of $4m, m \in Z^+$

	a_1	a_2	a_3	a_4	a_5
No. of intersections of matchsticks	4	9	16	25	36

1st difference: 9-4 = **5**, 16-9 = **7**, 25-16 = **9**, 36-25 = **11**
2nd difference: 7-5 = **2**, 9-7 =**2**, 11-9 = **2**

With the constant difference of 2 which is twice of the second difference found in the seventh table, still using the quadratic sequence in a form of $an^2 + bn + c$ with n = 1, 2, and 3.

$an^2 + bn + c = a_n$

$a(1)^2 + b(1) + c = 4$ $\quad a + b + c = 4 \longrightarrow$ eq. 1
$a(2)^2 + b(2) + c = 9$ $\quad 4a + 2b + c = 9 \longrightarrow$ eq. 2
$a(3)^2 + b(3) + c = 16$ $\quad 9a + 3b + c = 16 \longrightarrow$ eq. 3

Solving the values of *a*, *b*, *c*, using the system of linear equations in 3 unknowns, the researchers came up with

$n^2 + 2n + 1 = a_n \longrightarrow$ Formula for the number of intersections of matchsticks used on a polygon with perimeter of $4m, m \in Z^+$

C. Polygon with perimeter of 5m where m is a positive integer

Using the sequence formed with the number of intersections in a polygon with perimeter = $5m, m \in Z^+$, the researchers constructed a sequential formula.

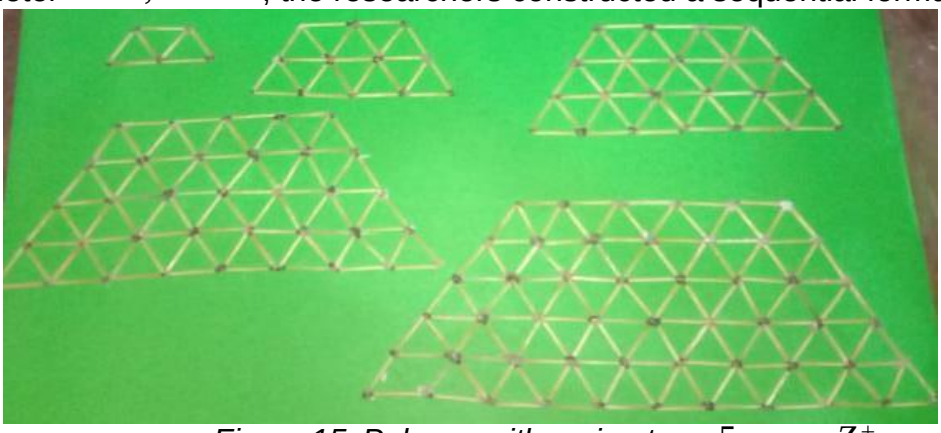


Figure 15. Polygon with perimeter = $5m, m \in Z^+$

The result is presented on the table below:

Table 9. Polygonal Sequence formed from the number of intersections of the matchsticks used in a Polygon with Perimeter of $5m, m \in Z^+$

	a_1	a_2	a_3	a_4	a_5
No. of intersections of matchsticks	5	12	22	35	51

1st difference: 12-5 = **7**, 22-12 = **10**, 35-22 = **13**, 51-35 = **16**
2nd difference: 10-7 = **3**, 13-10 =**3**, 16-13 = **3**

With the constant difference of 3 which is twice of the second difference found in the seventh table, still using the quadratic sequence in a form of $an^2 + bn + c$ with n = 1, 2, 3.

$an^2 + bn + c = a_n$

$a(1)^2 + b(1) + c = 5$ $\quad a + b + c = 5 \longrightarrow$ eq. 1
$a(2)^2 + b(2) + c = 12$ $\quad 4a + 2b + c = 12 \longrightarrow$ eq. 2
$a(3)^2 + b(3) + c = 22$ $\quad 9a + 3b + c = 22 \longrightarrow$ eq. 3

Solving the values of *a*, *b*, *c*, using the system of linear equations in 3 unknowns, the researchers came up with

$$\frac{3n^2 + 5n + 2}{2} = a_n \longrightarrow$$ **Formula for the number of intersections of matchsticks used on a polygon with perimeter of** $5m, m \in Z^+$

Summary of formulas (number of intersections of matchsticks):

P = $3m, m \in Z^+ = \frac{n^2 + 3n + 2}{2} = a_n$

P = $4m, m \in Z^+$ = $n^2 + 2n + 1 = a_n$ or $\frac{2n^2 + 4n + 2}{2} = a_n$

P = $5m, m \in Z^+$ = $\frac{3n^2 + 5n + 2}{2} = a_n$

By observing these three formulas the researchers formed a general formula which is equal to $\frac{(s-2)n^2 + sn + 2}{2} = a_n$, where S is the number of matchsticks used as a perimeter of the first polygon formed and n is the number of terms.

Verification:

Validating the formula if it is applicable for a polygon with perimeter of $5m, m \in Z^+$

For term 1:

s = 6 and n = 1

$$\frac{(s-2)n^2 + sn + 2}{2} = a_n$$

$$\frac{(6-2)(1)^2 + 6(1) + 2}{2} = a_1$$

$$\frac{(4)(1) + 6 + 2}{2} = a_1$$

$$\frac{4 + 8}{2} = a_1$$

$$\frac{12}{2} = a_1$$

$$6 = a_1$$

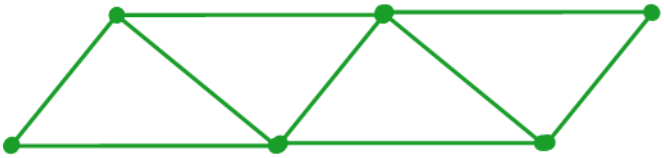


Figure 16. Polygon with perimeter = 6 by 1 matchsticks

It means to say that there are 6 intersections of the matchsticks found in a polygon with perimeter of 6 by 1 matchsticks.

For term 2:

s = 6 and n = 2

$$\frac{(s-2)n^2+sn+2}{2}=a_n$$

$$\frac{(6-2)(2)^2+6(2)+2}{2}=a_2$$

$$\frac{(4)(4)+12+2}{2}=a_2$$

$$\frac{16+14}{2}=a_2$$

$$\frac{30}{2}=a_2$$

$$15=a_2$$

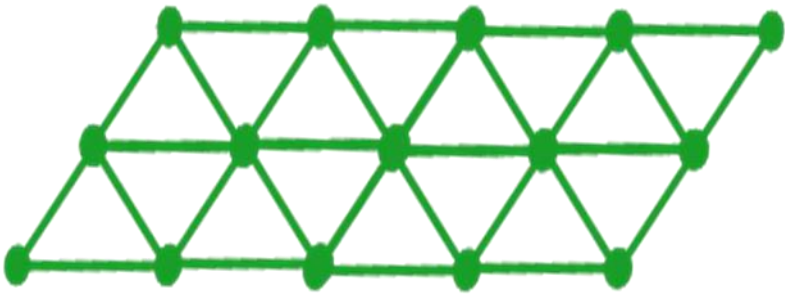


Figure 17. Polygon with perimeter = 6 by 2 matchsticks

This means that there are 15 intersections of the matchsticks found in a polygon with perimeter of 6 by 2 matchsticks.

For term 3:

s = 6 and n = 3

$$\frac{(s-2)n^2+sn+2}{2}=a_n$$

$$\frac{(6-2)(3)^2+6(3)+2}{2}=a_3$$

$$\frac{(4)(9)+18+2}{2}=a_3$$

$$\frac{36+20}{2}=a_3$$

$$\frac{56}{2}=a_3$$

$$28=a_3$$

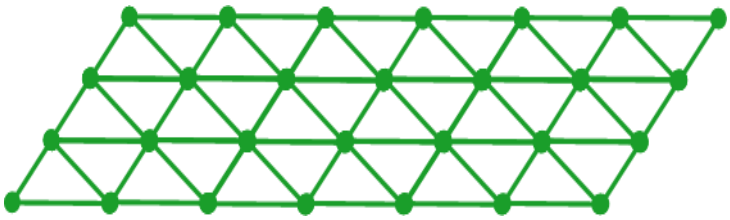


Figure 18. Polygon with perimeter = 6 by 3 matchsticks

It means that there are 28 intersections of the matchsticks found in a polygon with perimeter of 6 by 3 matchsticks.

Since it is verified that the formula is true for a polygon with perimeter of $6m, m \in Z^+$, thus, the researchers' formula for the nth term of the sequence formed from the number of intersections of the matchsticks in a polygon is true for all polygons with perimeter of n matchsticks.

Conclusions

The researchers formulated 3 general formulas for three different sequences: number of equilateral triangles formed, number of matches used, and number of intersections of the matchsticks found in a polygon which were investigated by forming polygons with equilateral triangles in them using matchsticks. The formula for the number of equilateral triangles formed is: $(s-2)n^2 = a_n$, for the number of matches used is: $\frac{3(s-2)n^2 + sn}{2} = a_n$, and for the number of intersections of the matchsticks found in a polygon is; $\frac{(s-2)n^2 + sn + 2}{2} = a_n$. These formulas are very effective since in converting huge sequence of numbers, we can make it into short and exact formulas.

Recommendations

The investigators recommend for further research to verify other processes or to investigate the in another way.

Compliance with Ethical Standards

The authors declare that there exists no conflict of interest in conducting the study, plagiarism was avoided and results were used only for research purposes.

Acknowledgments

The authors extend their heartfelt gratitude to all individuals who contributed to the success of this investigatory project. Special thanks are due to their families for unwavering support throughout every stage of the endeavour, from inception to completion.

Above all, the authors express profound gratitude to the Almighty God for bestowing guidance, intelligence, and untiring determination to undertake and execute this investigation. It is through divine providence that this journey has been made possible, and for this, the authors are truly thankful.

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PRIORITIZING INFORMATION SECURITY: ANALYSIS OF SOFTWARE DEVELOPMENT LIFE CYCLE METHODOLOGIES USING THE NIST CYBERSECURITY FRAMEWORK

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ABSTRACT

Information Security is now a major consideration for companies in protecting their data, customer's information, and sensitive areas. Besides from protecting data it is also becoming evident that in the past years that software development is being challenged by hackers and other personnel in the field of information technology with negative motives. Challenge now arises not on the final product or the capability of a software to withstand these threats and attacks, but the challenge is to protect itself during the development phase. SDLC or software development life cycles has proven its worth in developing timely and effective software. With the new trend and security issues it is forfeiting to analyze the capabilities of the majority of the SDLCs in terms of security. The study will analyze each SDLC, namely waterfall, rapid application development, spiral, v-model, and agile using the phases indicated in the NIST Cybersecurity SDLC Framework which focuses on security. The study focused on how each phase of the NIST framework can be used on each model and highlight how security is managed on each SDLC. It is not the goal of this study to determine which SDLC is better and which is not. The study aims to explain and describe how each SDLC implements and possibly use security features in each of its phase using the NIST as the framework of the study.

Keywords: *Information Security, Cybersecurity, Software Development Life Cycle, Waterfall, Rapid Application Development Model, V-Model, Spiral Model, Agile Model, National Institute of Standards and Technology, Software Engineering*

INTRODUCTION

Information Security was not an issue and was not used back in the late 1950s and 1960s, it was only realized in the 70s that from computer security it shifted to information security. The importance of security in the field of information technology was truly recognized due to the fact that threats, vulnerabilities exist and needs to be addressed in different ways possible. The merging of viruses that attacks local computers, network of devices, and enterprise systems be it in the government and in the corporate is something that needs to be addressed and must taken account for. Cases of data breach have been reported to escalate in the millennium year due to the open internet and the rise of technological convergence. This raises issues and challenges for software developers on how to develop well designed and up to date software without taking the data and information of the users in the pedestal of risk to hackers. SDLCs have proven their worth in guiding the team and serving as an important framework of the development. The challenge for SDLC now is to integrate information security measures in the process of software development. This study used the National Institute of Standards and Technology (NIST) Cybersecurity SDLC Framework (Revision 02) in analyzing each SDLC and how the framework can be injected on each phase or combined phases.

Research Objectives

The main objective of this study is to analyze the five major software development life cycles (SDLC) through the use of literary review. With the use of the chosen methodology the researcher has provided definition, advantages, and disadvantages of the use of each SDLC. From this description the researcher was able to identify the security measures that can be integrated on each or combined phases of each model. The research used the NIST Cybersecurity Model which has five areas namely, (1) initiation, (2) acquisition or development, (3) implementation or assessment, (4) operations or maintenance, and (5) sunset/ disposal. The study does not in any way suggest the best and worst SDLC, rather the study described the best way possible how each model can integrate the use of information security to address the possible threats, attacks, and vulnerabilities that negative entities oppose.

Review of Pertinent Literature

NIST Cybersecurity Software Development Life Cycle

In an article published by the National Institute of Standards and Technology written by Radack, S. (2009) it provides a new understanding on the general phases of SDLCs. The published work features five phases of the life cycle which are initiation, acquisition, implementation or assessment, operations or maintenance, and sunset (disposal). These phases highlights security in software development which is the main reason of choosing the NIST's framework as security is one of the top issues in the field of information technology today. Also, NIST has paved the way for information security to be injected in software life cycles the institution also provided a way to assess the risk, manage threats,

and accountability in project managers or anyone leading any software development project. According to Radack (2009), the new SDLC framework was developed in the NIST by Richard Kissel, Kevin Stine, and Matthew Scholl. The phases shall be the basis for the review of the five models stated at the start of the study.

Comparison of SDLC

Software Development Life Cycle (SDLC) is defined by Gupta, A., et al (2021) as a method where there is a clear goal of procedure in developing high end quality software which are economic to produce. SDLC must always be viewed as a systematic and logical approach to system development, testing, quality assurance, and implementation. In their study a comparison was made to determine the advantages and weaknesses of each SDLC. The study focused on determining when to use each SDLC – in simple or complex projects. The study revealed in descriptive research the definitions, usage, advantages, limitations, and strengths of each SDLC that was commonly used in industries.

Software Engineering

According to the study conducted by Akinsola, J., et al (2020) software engineering and software development life cycle are not two different entity rather SDLC is a major part of software engineering when it comes to system development. In their journal software engineering was described as a meticulous process of coding and writing efficient codes in order to produce economical and high quality software and the use of SDLC provides an avenue for one. That is the reason why an analysis of the different SDLCs must be conducted in order to assess each model's value and how they can contribute to the advancement of software quality and security. By analyzing these models' other researches as similar to Akinsola and others provide improvement with the use of SDLC in contributing to high quality, economic, and marketable programs.

METHODOLOGY

This study utilized existing studies and literature to develop the ideas and information presented. Sources of studies and literature came from legitimate and indexed journals. Studies revolving in software development lifecycle and the NIST Cybersecurity framework were meticulously analyzed and studied by the researcher to come up with the final objective of the study.

RESULTS AND DISCUSSION

WATERFALL MODEL

A waterfall model starts with determining the requirements through analysis and planning, followed by the designing of the system or software then implementing the system for testing and quality assurance, then followed by the integration of the system in the process of the organization it also involves a deeper process of testing and eventually is fully implemented, operated and maintained. This methos is a linear process of software development without considering such as changes, market demands, and business requirements (Saravanos, 2023)

In an analysis conducted by Pargaonkar, S. (2023), he has provided the advanatges and disadvantages of using the waterfall model which are the following:

Advantages of Waterfall

1. Structured and Predictable
2. Comprehensive Documentation
3. Easy Management
4. Clear Deliverables
5. Suitable for Small Projects

Disadvantages of Waterfall

1. Limited Flexibility
2. Lack of Customer Involvement
3. High Risk
4. Lengthy Development Cycle
5. Not suitable for Complex Projects

Recommendation in Incorporating Information Security using the NIST Cybersecurity Framework

Initiation Phase: Since the first phase of the waterfall model involves the gathering of requirements that involves information and data it is best to integrate the concept of initiation that all information and data being collected and to be processed in the system adheres to the basic triad of information security, confidentiality, integrity, and accessibility. This means that the gathered data must be confidential especially when there are data that are highly valuable it is best to have an NDA or non-disclosure agreement between the developer and the company or organization. Another is the integrity. All information must be of credible source and must be treated with secrecy and use this information for system development purposes only, especially in the initiation phase where all information about the process and wants of the company is provided. It is important to remember that the information security protocols must be well stated and

fully implemented as this is a waterfall model where there should be a well-defined plan at the start.

Acquisition/ Development Phase: This phase may be done during the system design and implementation or coding as it involves risk assessment and creation of an information system plan where the developers consider information security protocols, hardware, network, and others in all parts of the software/ program that needs to be addressed. Since this is waterfall, all controls and procedures with regards to information security must be aligned to the previous determined requirements and the conduct of risk assessment involves only the system design and implementation.

Implementation/ Assessment Phase: Besides from the actual testing which involves quality assurance, information security must also be observed in the testing phase and implementation of the system. All use case studies and QA results must be well documented. Security in all forms of the modules must be considered not only the basic ones such as username and password, complex parts of the program must be considered on how information security is integrated from the software's modules, business process, framework used, network, and hardware adopted in the project. In a waterfall concept this phase can be made in the Testing and Deployment and should only be done in small scale and controlled variable projects.

Operations/ Maintenance Phase: After the successful creation and testing of the software, it will be maintained. During operational or maintenance phase, proper documentation must take place and change management must also take place as software or programs integrate new hardware, provide new features, and upgrading its firmware also change in environment may occur with this changes information security must assess the potential threats, attacks, and vulnerabilities. In the waterfall model to achieve a successful assessment it is advised to conduct this phase in the Deployment and Maintenance Phase to see the results of the deployment and to suggest possible steps in security.

Sunset/ Disposal Phase: The sunset phase or disposal phase involves the transition of the existing system to the proposed and developed system. This must ensure how data and information is transferred and if there are data that needs to be disposed, and what mode of retrieval is implemented. Since the waterfall model is a linear model it is suggested that this phase is conducted in the requirements gathering where information and data is gathered. A plan must be layout regarding the disposal of unwanted data from the present storage that is not relevant enough to be transferred, storage or archival of existing or old information, proper transfer of data and its methodology, also to consider is the hardware and peopleware. Security is much involve in this phase.

RAPID APPLICATION DEVELOPMENT (RAD) MODEL

Rapid Application Development (RAD) addresses the issues and challenges faced by the waterfall model in terms of change management. In the study of Sasmito, G., et al. (2020) it is described that RAD model focuses on quick software development and prototyping

that provides a quality software in the end of the process. Also, this model helps the economic part of the development and maintenance of the software. The difference of RAD with other models is that it has only short span of planning process and focuses more on software development, testing, and feedback.

To better understand the benefits of the model, Dhiman, K. L. (2024) has presented the advantages and disadvantages of the model as presented below:

Advantages of RAD Model

1. Flexible and adaptable to changes.
2. It is useful when you must reduce the overall project risk.
3. It is adaptable and flexible to changes.
4. Due to code generators and code reuse, there is a reduction of manual coding

Disadvantages of RAD Model

1. It cannot be used for smaller projects.
2. Not all applications is compatible with RAD.
3. When technical risk is high, it is not suitable.
4. Requires highly skilled designers or developers.

Recommendation in Incorporating Information Security using the NIST Cybersecurity Framework

Initiation Phase: During the requirements planning of RAD, the initiation of security requirements must commence, a detailed list of security concerns with regards to the gathering of data must be crafted, though there will be changes in the requirements it is acceptable since the model provides refinement during the prototyping stage. The data to be collected must be assured that it is handled properly during the development.

Acquisition/ Development Phase: This phase can be integrated in the user design phase, since it involves risk assessment. The difference with this in the waterfall model is that it will assess the security mostly in the prototyping stage which is actually efficient and productive since the all the possible risk, attacks, and vulnerabilities are identified before the actual construction of the whole program/ system. It is also a good avenue to refine the results of the assessment that will lead to the development of the information security plan or policy of the software.

Implementation/ Assessment Phase: This phase must be placed in the construction phase it is suggested that there is a formal documentation of all the results of the security check indicated in the risk assessment or in the plan developed. The results will depend on the testing and full construction of the software or program. Although testing of the plan and security measures where conducted in the prototyping stage, still in the full construction there will always be changes that is why full and careful documentation of all modules and their respective security measures must take place.

Operations/ Maintenance Phase: Since the RAD model has only minimal phases, the operations phase can be inserted together with the implementation since in involves change management and development of changes in the risk assessment and security policy.

Sunset/ Disposal Phase: The disposal phase or sunset is the cutover or the implementation and transition of the software. All data and information stated in the requirements planning will be recalled in this phase if it was treated properly. Like other models, the storage and transition of data is considered in this phase of the NIST framework. Although it is similar with other models, the process of storage, retrieval, and transition of data can be already formulated in the prototyping stage as there are modules that require database and a backend process where the transition of data is considered and only in the sunset phase the actual data transition, storage retrieval, archiving, and disposal is commenced. It will ensure a high valued security assessment.

V-MODEL

The V-Model provides a new perspective on dealing with business changes. The main concept of the model is that in every phase there is always a parallel testing. This model is a variation of the waterfall which is based on the interaction of each phase with testing stages. What highlights the model is that it promotes tenacity when implementing, a phase cannot move forward without the approval and testing of the existing phase to make sure that all changes or requests are addressed (Maryani, H. P., et al. 2022).

According to the study of Jagli, D., et al (2017), the V-Model poses strengths and weaknesses which are:

Advantages of V-Model

1. Success rate is more compared to waterfall model.
2. Saves time due to testing of planning and design work will be finished before coding.
3. Bugs are found at early stage.
4. Suitable for small projects

Disadvantages of V-Model

1. Least flexible with respect to modifications
2. Prototype of software is not available until implementation phase
3. In middle of project if any changes happens will effect changes for test documents as well as requirement documents.

Recommendation in Incorporating Information Security using the NIST Cybersecurity Framework

Initiation Phase: One of the strengths of the V Model is that in every phase there is a testing and acceptance phase equivalent (left-right model). Identifying the needed process, data, information, and other information security related areas are needed to be tested if all areas are correct and needed, after the identification the client of the requesting organization shall approved these areas. In addition, in this phase it can be also tested and ask for the approval of the organization regarding the assets needed to be considered in developing the system. Besides from the collection of data with regards to the actual system, the initiation phase must consider the security features of the system and on the other side (validation) is to validate if the prescribed security features meet the user requirements, needs, and expectations.

Acquisition/ Development Phase: During the System Design, a risk assessment can be developed. Since this phase involves results from the succeeding phase all the tested and approved security requirements are then used to develop a risk assessment and an information security plan. After its development, the assessment or plan is then tested and approved by the organization and is accepted as part of the development. The risk assessment shall provide an understanding of the possible security threats and solutions from acquiring the information system. This will help them to assess if what costs must be added and modules to consider in adding or revising to meet the demands of information security.

Implementation/ Assessment Phase: From the architectural design down to module design the implementation phase of the NIST framework can be integrated, however it differs the process since the actual coding and main programming is at the end of the model, the proposed security features can be then tested in this phases it has a similar approach with the RAD Model before delving into the main development testing is integrated in each phase. After each test the result is then reviewed and accepted by the organization. The V-Model also provides an avenue in this implementation phase to check if the modules of the system or features meet the security requirements and does not in any way conflict with the software requirements specifications by testing and validation.

Operations/ Maintenance Phase: During the coding phase where all security requirements are already tested and accepted, the development of the system must consider all the accepted security requirements and must undergo quality assurance and change management to assure that the system is not only functional, but is also secured from possible threats, attacks, and vulnerabilities which solutions are laid out in the security policy or requirements.

Sunset/ Disposal Phase: Since there is no provision in the V-Model that clearly states the transition, implementation, and storage of existing data to the proposed system, the researcher suggests that the disposal or sunset phase of the NIST cybersecurity framework is placed from the architectural down to Unit testing since it identifies the needs

of the system and security, the creation of the database and network is also considered in these phases which are crucial in data transition and storage.

SPIRAL MODEL

Confusions have been raised about the use of the spiral model amongst students, faculty, and practitioners. In the study of Singh, A., et al (2020). it explains a well detailed definition of the spiral model. It states that the spiral model develops software in incremental releases. On the first phases of the development a prototype is created before moving into the design and coding phase it ensures that the requirement or change is being met at each phase, after the development of the software the developers or the team must plan for the next phase. The spiral model is used when there is a limited budget and risk assessment is important, and importantly the model is used only for medium – high risk projects.

Despite of the confusions of the Spiral Model, Shylesh, S. (2017) has presented the advantages as well as the disadvantages of the use of the model;

Advantages of Spiral Model

1. Continuous changing requirements can be managed.
2. Much use of prototypes is allowed.
3. Requirements collect more accurately.
4. Users see the system early.
5. Development process is divided into parts and risky parts are developed early which help better management.

Disadvantages of Spiral Model

1. Complex management.
2. Project completion duration is not known.
3. Not suitable for low risky and small projects.
4. Process is complex.
5. Spiral indefinitely can go
6. Large number of phases requires heavy documentation.

Recommendation in Incorporating Information Security using the NIST Cybersecurity Framework

Initiation Phase: Spiral model was developed for the purpose of valuing risk assessment. Having the NIST framework shall strengthen its goal of crafting software where security is always a consideration. During the initiation, like the other models data, information, business process are all determined and all features of the software or project are scrutinized and well planned about what security features must be in place.

Acquisition/ Development Phase: The model shows the risk assessment of the study and how it is used. This already explains the advantage of the spiral model with other models in terms of information security.

Implementation/ Assessment Phase: All requirements stated in the planning are tested, the unique part of the spiral model is that the security feature requirements can be tested in prototype and the requirements may change during the development. With this, the security features and other parts of the system can be viewed by the client multiple times even during the development. Also, because the model is designed to address risk assessment, the risky parts of the software requirements are also divided into teams that address them quickly.

Operations/ Maintenance Phase: This phase can be integrated in the evaluation phase of the spiral model as it involves maintenance and assuring that all security requirements are met and changes during the development are addressed. Proper documentation of all experiences by the client during this phase should be well maintained. Since this is spiral, all of the comments and experiences of the client may undergo another requirements gathering which also means another cost for them.

Sunset/ Disposal Phase: Similar to the V-Model there is no direct phase in the Spiral Model that is dedicated to disposal, the researcher suggests that the disposal or sunset phase can be included in the evaluation or in the development, since this involves the actual data transition, proper storage, and archival.

AGILE MODEL

One of the most used and positively accepted methodology in the corporate world today is the agile methodology, in Islam, et al (2020) study it was highlighted that this methodology has five phases which are iteration, development phase, release phase, and production phase. This model addresses fast phasing changes in all sizes of project from small to complex. According to the authors, the model is used in extreme programming (XP), feature driven development, and adaptive software development. It only shows how adaptive the model is to changes and its capacity to adjust on complex projects. An agile model uses scrums or meetings in a short span of time to address issues directly.

In the study of Gurung, G., et al (2020) it was stated in their study the advaatges and disadvantages of using the agile model which are;

Advantages of Agile Model

1. Working through Pair programming produce well written compact programs that have fewer errors as compared to programmers working alone.
2. It reduces the total development time of the whole project.
3. Customer representatives get the idea of updated software products after each iteration. Therefore, it is easy for him to change any requirement if needed.

Disadvantages of Agile Model

1. Due to lack of formal documents, it creates confusion and important decisions taken during different phases can be misinterpreted at any time by different team members.
2. Due to the absence of proper documentation, when the project completes and the developers are assigned to another project, maintenance of the developed project can become a problem.

Recommendation in Incorporating Information Security using the NIST Cybersecurity Framework

Initiation Phase: As one of the mostly used methodology as of today, it is highly recommended that Agile must integrate security on its model. For the initiation all requirements similar to other models such as data, information, requirements on software, hardware, peopleware, and firmware must be considered especially the security requirements. Since this is Agile changes may occur during the development of the system which is an advantage for agile methodology since change requirements is the reason for its development. Although the model is adoptable to change, the early detection of security measures and possible threats during the development wil help the organization or client to minimize its cost by establishing a high-level information security policy throughout the development.

Acquisition/ Development Phase: All requirements identified in the former shall be built inside the iteration and sprint. The inclusion of risk assessment planning and development of security policies can be done I this form, during the design phase or the prototyping, initial risk assessment of each module or feature of the system can be identified, after the initial identification, the security personnel may proceed with the integration and suggest a plan where these attacks can be mitigated in the actual programming/ development (e.g. writing a code with algorithm to prevent SQL injection) and also suggest features in the system that will strengthen its security (ex.: 2 Factor Authentication, OCR, Email Verification, etc.) in this way the security is fully implemented in the system. After the development, is the test all security features must be tested to assure it meets the security requirements and to further improve the risk assessment and security policy when the system is implemented, deploy and review shall help in acquiring and changing the security requirements.

Implementation/ Assessment Phase: The implementation phase is highly suggested to be ingrained inside the iteration loop in the deployment and review with some of its functionalities also in the release phase. This will ensure if all security requirements are met and to assess if there are still needs to be improved.

Operations/ Maintenance Phase: Maintenance Phase of the agile model best suites the operations phase. Change is constant in the IT industry, that is the main reason why a full documentation of the deployment and maintenance phase is needed to address all

changes of the system and also the system's security. With the agile method it becomes more flexible to address all security changes.

Sunset/ Disposal Phase: In a similar vein with other SDLC models, the sunset or disposal phase can be ingrained in the last part of the model which is maintenance. Since the agile model provides flexibility in the iteration or sprint loop, the procedures of transition, archiving, storage and retrieval of data and information must all be tested before proceeding to the last phase where implementation is made.

Conclusions

The study revealed how each SDLC may posses and integrate the five phases of the NIST. Initiation phase reveals that all models receive the same analysis in data gathering and considering all information, data, and security requirements, the only difference is how it is maintained and passed on to the next phase of the model or in other phases. Also, in the study it is observed that not all models have the provision for data transition and disposal. This is the sunset or disposal phase which features the proper transition, disposal, archival, and retrieval of data. The analysis opf SDLC models shows that it can be ingrained in some parts of the phases of all the models, this only shows that data acquisition and removal is a vital component of information security ang must be taken into consideration by SDLCs.

Nevertheless, this analytical review of the different software development life cycle integrating information security provides a new perspective on using SDLC with security. Also, it is important to note that the used framework was the version 2 of the NIST framework which the researcher can conclude that it has used a new version contributing a new idea in the field of information security and software development. The analysis provides also technical skills on how each SDLC and security is used in different project size and showed the benefits it can provide to companies such as costs cutting, staff time reduction, and being safe with possible threats and attacks inside and outside of the organization.

Recommendations

With the results of the study, it is recommended that for future researchers thatother software development life cycles such as the iterative waterfall, agile scrum and emerging SDLCs be subject as samples in integrating information security that would benefit their process. Also, it is recommended that the existing SDLC may add new phases that will deal with data transition, storage, archival, and disposal to accommodate the last phase of the NIST framework which is disposal. These recommendation will fully help project managers to understand the importance of information security and the advantages that it brings in terms of project development and economic purposes for the organization.

Compliance with Ethical Standards

Although the research did not used any data gathering tool in collecting quantitative data, the research used documents and related literature in obtaining its objective. The researcher verified all sources and made sure that all sources are credible as majority of the research are all published internationally. Another compliance with ethical standard is that all studies and their authors are cited properly using the proper and new format of APA citation.

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PROFESSIONAL DEVELOPMENT NEEDS OF ELEMENTARY TEACHERS IN ALILEM DISTRICT: INPUT FOR A LOCALIZED FRAMEWORK IN THE IMPLEMENTATION OF FACULTY DEVELOPMENT

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ABSTRACT

Professional development plays a crucial role in enhancing the knowledge, skills, and competencies of elementary teachers. This study aims to identify the professional development needs of elementary teachers and provide input for the development of a localized framework in the implementation of faculty development. A comprehensive review of literature was conducted to explore the specific areas of professional development that are essential for elementary teachers. The findings highlight the importance of professional development in areas such as content knowledge and pedagogy, technology integration, classroom management and behavior support, assessment and data analysis, collaboration, and culturally responsive teaching. Additionally, the study examines the preferences and job satisfaction of elementary teachers in relation to their autonomy over professional development. The results indicate that teachers express higher job satisfaction when they have autonomy over their own professional development. The insights from this study provide valuable input for the design and implementation of a localized framework that addresses the unique professional development needs of elementary teachers. By aligning professional development opportunities with these needs, educational institutions can support the growth and effectiveness of elementary teachers, ultimately enhancing student learning outcomes.

Keywords *Professional Development, Professional Needs, Teacher's training*

INTRODUCTION

The processes and actions that aim to improve teachers' professional knowledge, abilities, and attitudes in order for them to increase students' learning can be referred to as teachers' professional development. After entering the workforce, professional development refers to acquiring new skills through career training and ongoing education. To increase your knowledge in your chosen subject, it may involve enrolling in seminars or workshops, going to professional or industry conferences, or receiving a credential. The concept of professional development acknowledges that development can be offered in a variety of settings, from the formal to the informal, and defines it as "activities that develop an individual's skills, knowledge, expertise, and other characteristics as a teacher."

One of a teacher's main responsibilities is to deliver effective instruction. The teaching profession is always evolving. due to the profession's always evolving and eternal nature. The most important person in the classroom is the instructor. The future of pupils could be either made or broken by their teachers. Professional growth can be improved through faculty development initiatives such lesson planning, lesson delivery, and knowledge of the topic, the teacher's ability to connect with the pupils, and classroom management.

There is an increase in instructional methods in the collaboration and innovation in the twenty-first century (Wirth & Feldmann, 2019). Currently, teachers are well recognized that ongoing professional development is essential for improving teachers' overall effectiveness and increasing their performance and commitment to their work. The contemporary educational system requires teachers to constantly adapt modifications are made to satisfy the needs and demands of students in the worldwide economy. Instructional Planning must be effectively realized to attain positive student outcomes. Instructional plans can make knowledgeable teachers become competent and effective educators who can transform the learner (Cuñado & Abocejo,2019) No Filipino Child Left Behind Act of 2010: The State shall take appropriate measures to ensure that all citizens have access to high-quality education. education is available. Recent changes emphasize curricular consistency, which makes teachers more responsible. As a Since instructors have a significant impact on students, it might be difficult to identify the results that would best show their efficacy and how to evaluate outcomes. The educational attainment of students is significantly influenced by good teachers who have a mastery of the subject matter, appropriate pedagogical training, and a positive attitude toward teaching (*Ayayi et al.,* 2020). A deeper comprehension of has something to do with preparing pupils to be lifelong learners. pedagogy's impact on student learning (Paniagua & Istance,2018). (Ajayi et al,2020) claim that effective teachers with a command of the subject matter, appropriate pedagogical training, and a constructive outlook attitudes toward instruction are important factors in how well pupils do in school. However, some researchers have

discovered that professional development activities have little impact on the performance of the teachers, despite the fact that it has never been properly analyzed to meet the needs of the teachers. Professional development is also not related to the effectiveness of teaching strategy in the classroom and lacks passion and follow-up but this study suggests that strategic planning, implementation, and evaluation of professional development activities could benefit teachers more (Capuno; et al,2021). Teacher professional learning is of increasing interest as a critical way to support the increasingly complex skills students need to learn in order to succeed in the 21st century. Sophisticated forms of teaching are needed to develop student competencies such as deep mastery of challenging content, critical thinking, complex problem solving, effective communication and collaboration, and self-direction. In turn, effective professional development (PD) is needed to help teachers learn and refine the instructional strategies required to teach these skills (Hammond et al.,2017) Teacher trainers are among those who are engaged in the learning of learners, educators, and ongoing PD of in-service educators (Czerniawski et al., 2019).

Nonetheless, in the last 20 years, scholars, and teacher trainers themselves began to growingly notice the particular quality of their jobs, and so, they have begun to emphasize teacher trainers' PD (Berry, 2016; Lunenberg et al., 2017). Thus, an educational space is a location for students to gain new knowledge and abilities, as well as a place for educators to study and further their professions. And EFL instructors must acquire the most recent education knowledge and abilities within the context of English language education and learning in order to improve learners' development and growth while meeting global needs (Zhiyong et al., 2020). To fully comprehend and support educator trainers' professional development, it is critical to understand what skills and information they require and how they learn such skills and knowledge efficiently during their careers (MacPhail et al., 2019). Professional development programs boost job happiness by assisting in the creation of a satisfying work environment. setting in which educators can gain skills and resources to overcome issues in their profession (Sprott ,2019)).

Despite the fact that the intricacy of Faculty Development processes has been recognized in the introduction of comprehensive evaluation frameworks, numerous loopholes remain must be completed in order for faculty developers to conduct evaluations of this complexity must take into account and contribute to the development of an empirical knowledge base (Phuong, Cole, & Zarestky et al., 2018). According to Darling-Hammond et al. (2017), the purpose of any Professional development (PD) is used to improve teachers' knowledge and skills. When implementing a PD model, the major consideration is as Lesson Study (LS), is thus to see if it can cause these modifications (Guskey, 2021), who advocates for comprehensive PD assessments that produce replicable and comparative data, agrees identifying and defining key components that contribute to the effectiveness of PD, and ways in which they can be adapted can be a fruitful method to work. Darling-Hammond and colleagues (2017) underline the need of credible techniques of evaluating teachers on their PD work. If practitioners understand how to identify the conditions required, to improve their outcomes, such as more time, space, or expertise, this could help them communicate

these needs to school boards, policymakers or administrations (Darling-Hammond et al. 2017). In this regard, The Department of Education (DepEd) is devoted to providing Education of high quality. Aside from creating enhancements to physical facilities and DepEd is also attempting to improve the curriculum. Create effective teachers. A good instructor is always expected to develop a high-quality learner. Teachers' quality performance is equivalent to fantastic outcome for the achievement of the vision of the Department for the Filipino people. Gender and Development, In-service trainings and Learning Action Cell programs are some enhancement programs conducted by the Department of Education in every school through the initiative of the school heads and training and development coordinators. Those programs which are usually conducted during semestral breaks lead teachers to cope up with the difficulties and problems met in the previous grading periods. However, such development programs shall be done in consultation with relevant DepEd units and stakeholders, towards aim for professional development (DepEd Advisory No.147 s.2017).

Although such studies discussed teachers' views on professional development, it is unable to provide a more general description of school atmosphere, student achievement, or teachers' knowledge and skills. In order to provide professional development that is in line with teachers' perceptions of their needs and secures the participation of the teachers, it is crucial for schools and administrators to take- into account the diverse backgrounds of teachers and students, to provide numerous, interconnected opportunities for professional colleagues to interact with one another, and to work to create a school environment that maximizes opportunities for collaboration as well as for learning.

A teacher's dedication cannot be gauged by the number of years spent in the profession or the they have on their student's lives; rather, it must be determined by how much time and effort they are willing to devote to advancing and deepening the knowledge that must be imparted to students. The participation of teachers in ongoing professional development is crucial for advancing knowledge and abilities while quickly improving the teaching and learning process (Schleicher, 2017). With these, each teacher will understand why they are losing interest in furthering their education, especially in enrolling in master's and doctoral programs as teachers' engagement in professional development is impeded by several factors or reasons.

In fact, review of these researches revealed salient research gaps that need further investigation. Notably, studies that shall design and initiate programs for professional development of teachers based on their specific needs and the factors or barriers that may affect their engagement in these programs are needed (Eroglu & Kaya, 2021; Sahagun & Matriano,2019)). Interestingly, these investigations could use quantitative, qualitative, or mixed method approaches (Sahagun & Matriano, 2019). Such investigation will pave way to the strategic planning, implementation, and evaluation of professional development activities that could benefit teachers more (Padillo et al., 2021; Haq & Zulfgar, 2018). Hence, this study is being proposed.

A strong faculty development program that may increase the teacher's knowledge is essential to providing high-quality instruction and knowledge. It can provide a successful and reasonable method for carrying out best practices and achieving objectives. The professional viewpoint of the teacher can have a significant role in developing proficiency. The teacher's understanding of the subject matter and love for the job can pique pupils' interest and boost achievement and academic performance of students. Consequently, even when a teacher receives little advantage from the activities for professional growth. Professional development initiatives were found to have no impact on the teacher's professional development needs Despite this, there has never been a thorough analysis of teachers' performance to meet their demands. At this time, Professional development lacks passion and is unrelated to the efficiency of teaching techniques in classrooms. Nevertheless, this study demonstrates that professional strategic planning, execution, and evaluation teacher development initiatives could be more advantageous. Therefore, this study proposes to design and initiate an input for a localized framework in the implementation of faculty development.

Research Questions

1. What is the level of perception of the teachers on their professional needs along:
    a. Content Knowledge on Pedagogy
    b. Learning Environment and Diversity of Learners
    c. Curriculum in Planning
    d. Assessment and Reporting
    e. Community Linkages and Professional Engagement
    f. Personal Growth and Professional Development
    g. Plus Factor
2. What is the level of agreement of teachers on the factors that affect their professional development?
3. What are the strengths and weaknesses of teachers?
4. What localized framework in the implementation of the faculty development can be Developed?

METHODOLOGY

Research Design

"This study will employ a descriptive survey as its research design. A descriptive survey is a method of collecting data that provides an in-depth understanding of a population's characteristics. Given that this study aims to identify and describe the professional development needs of elementary teachers in Alilem District, Alilem, Ilocos Sur, using a questionnaire, the researcher found this design to be appropriate for the study."

Population and Locale of the Study

The study will be conducted at Alilem District, Alilem Ilocos Sur during the school year 2023-2024. The respondents of the study will be the elementary teachers of the said district. They will be chosen using total enumeration sampling. The total number of respondents is shown in table 1.

Age Group	Number of Respondents
25-30	5
31-40	5
41-50	9
51-60	10
61-64	1
TOTAL	30

Research Instrument

"In gathering pertinent data, the researcher will use a self-made questionnaire. Questionnaires are indeed popular tools used by researchers to collect data. They can be designed in various formats, such as multiple choice. The questionnaire will have two parts. The first part will assess the teachers' perception of their professional needs. The second part will gauge the teachers' level of agreement on the factors that affect their professional development and will identify the teachers' strengths and weaknesses. Notably, the research instrument will undergo validity and reliability testing before being used in the study."

Data Gathering Procedure

"To gather the necessary data, the researcher employed a qualitative approach, using questionnaires. This approach allowed the researcher to capture a broad range of responses through the survey. The participants in this study were elementary teachers from the Alilem District. They were chosen to participate based on their willingness and availability. In total, the researcher gathered data from 30 teachers, providing a rich and diverse set of perspectives. In the following sections, the researcher will detail the specific instruments used for data collection, the step-by-step procedure of the data gathering process, how the data was handled and stored, and the ethical considerations adhered to throughout the study."

Treatment of Data

In analyzing and interpreting the gathered data, the mean will be used to describe the level of perception of the teachers regarding their professional needs and the level of agreement among the teachers on the factors that affect their engagement in any of the initiated professional development activities. The mean will also be used to describe the level of validity of the faculty development program for teachers

Data Categorization

The norm below will be used in interpreting the data:

1 2 3 4	1.0 - 1.60 1.61 - 2.20 2.21 - 3.40 3.41 - 4.00	Strongly Disagree (SD) Disagree (D), Agree(A) Strongly Agree (SA)	Very Low (VL) Low(L) High (H) Very High (VH)

RESULTS AND DISCUSSION

Part I: Level of perception of the teachers on their professional needs.

Table 1: Content Knowledge on Pedagogy

Indicators	**MEAN**	**DR**
I need trainings and seminars in improving my teaching strategies	3.60	SA
I need trainings and seminars particularly in terms of managing behavior and creating a positive learning environment.	3.67	SA
I need trainings and seminars in creating and grading assessments, as well as using assessment data	3.60	SA
I need trainings and seminars in developing and adapting curriculum to meet the needs of our students. This could include learning how to align lessons with standards, how to incorporate real-world examples into lessons, or how to create engaging and relevant lessons	3.77	SA
I need an opportunity to collaborate with other teachers, attend professional development workshops, or pursue further education	3.87	SA
I need trainings and seminars in improving my teaching strategies	3.60	SA
OVERALL MEAN	3.70	VH

Legend

Range of Ratings	**Descriptive Rating (DR)**	**Overall DR**
3:41 – 4:00	Strongly Agree (SA)	Very High (VH)

2:21 – 3:40	Agree (A)	High (H)
1:61 – 2:20	Disagree (D)	Low (L)
1:00 – 1:60	Strongly Disagree (SD)	Very Low(VL

Table 1, derived from a survey conducted among elementary teachers in Alilem District, presents the level of perception of teachers regarding their professional development needs, specifically focusing on content knowledge and pedagogy. The table provides a valuable input for a localized framework in the implementation of faculty development.

The table is organized with various professional development indicators listed in the rows and the corresponding mean scores and descriptive ratings (DR) in the columns. The indicators represent different areas where the teachers feel they need training or seminars. The mean scores range from 1.00 to 4.00, with higher scores indicating stronger agreement with the need for professional development in the stated area. The descriptive ratings (DR) provide a qualitative interpretation of the mean scores, ranging from "Strongly Disagree" to "Strongly Agree".

According to the table, all indicators have a mean score above 3.60, which corresponds to a "Strongly Agree" rating. This suggests that the teachers perceive a high need for professional development in all the stated areas. The highest mean score is 3.87 for the indicator "I need an opportunity to collaborate with other teachers, attend professional development workshops, or pursue further education".

These results indicate a strong perceived need for professional development among elementary teachers in Alilem District, particularly in the areas of collaboration, attending professional development workshops, and further education. The teachers also expressed a strong need for training and seminars in improving teaching strategies, managing behavior, creating a positive learning environment, creating and grading assessments, and developing and adapting curriculum.

In conclusion, the table reveals a significant perceived need for professional development among elementary teachers in Alilem District. This underscores the importance of incorporating a wide range of professional development opportunities, including collaboration, workshops, further education, and targeted trainings, into a localized framework for faculty development. The overall mean score of 3.70, which corresponds to a "Very High" rating, further emphasizes the perceived importance of these professional development needs.

Table 2: Learning Environment and Diversity of Learners

Indicators	MEAN	DR
I need seminars and trainings on understanding the diverse backgrounds and learning styles of the students. This could include training on cultural competency, understanding different learning disabilities, and strategies for teaching English language learners.	3.70	SA
I need seminars and trainings on how to create an inclusive classroom environment. This could include strategies for differentiating instruction, using inclusive language, and creating a classroom culture that values diversity.	3.68	SA
I need seminars and trainings on how to manage a diverse classroom effectively. This could include strategies for managing behavior, creating a positive learning environment, and dealing with conflicts.	3.60	SA
I need professional development on how to adapt curriculum to meet the needs of diverse learners. This could include training on how to modify lessons and assessments, how to incorporate multicultural perspectives into the curriculum, and how to use technology to support diverse learners.	3.20	A
I need seminars and trainings on how to collaborate effectively with other educators, parents, and community members to support diverse learners. This could include strategies for effective communication, team teaching, and community engagement.	3.53	SA
I need professional development on the legal and ethical considerations related to teaching diverse learners. This could include training on special education law, confidentiality, and ethical decision-making.	3.47	A
Overall Mean	3.53	VH

Table 2, derived from a survey conducted among elementary teachers in Alilem District, presents the level of perception of teachers regarding their professional development needs, specifically focusing on learning environment and diversity of learners. This data serves as a crucial input for a localized framework in the implementation of faculty development.

The table is organized with various professional development indicators listed in the rows and the corresponding mean scores and descriptive ratings (DR) in the columns. The indicators represent different areas where the teachers feel they need seminars or trainings. The mean scores range from 1.00 to 4.00, with higher scores indicating stronger agreement with the need for professional development in the stated area. The descriptive

ratings (DR) provide a qualitative interpretation of the mean scores, ranging from "Strongly Disagree" to "Strongly Agree".

According to the table, most indicators have a mean score above 3.50, which corresponds to a "Strongly Agree" rating. This suggests that the teachers perceive a high need for professional development in most of the stated areas. The highest mean score is 3.70 for the indicator "I need seminars and trainings on understanding the diverse backgrounds and learning styles of the students."

These results indicate a strong perceived need for professional development among elementary teachers in Alilem District, particularly in the areas of understanding student diversity, creating an inclusive classroom environment, and managing a diverse classroom effectively. The teachers also expressed a need for professional development in adapting curriculum to meet the needs of diverse learners, collaborating effectively with other stakeholders, and understanding the legal and ethical considerations related to teaching diverse learners.

In conclusion, the table reveals a significant perceived need for professional development among elementary teachers in Alilem District, particularly in relation to the learning environment and diversity of learners. The overall mean score of 3.53, which corresponds to a "Very High" rating, further emphasizes the perceived importance of these professional development needs.

Table 3: Curriculum Planning

Indicators	MEAN	DR
I need trainings and seminars on understanding and interpreting curriculum standards. This includes both national and local standards, as well as any specific standards for their subject area.	3.33	A
I need trainings and seminars on how to develop effective lesson plans. This could include training on how to align lessons with standards, how to structure a lesson, and how to incorporate a variety of teaching strategies.	3.43	SA
I need trainings and seminars on how to differentiate instruction to meet the needs of diverse learners. This could include strategies for modifying lessons and assessments, as well as strategies for teaching students with different learning styles and abilities.	3.43	SA
I need trainings and seminars on how to integrate technology into the curriculum. This could include training on how to use specific educational software, how to incorporate online resources into lessons, and how to use technology to enhance student learning.	3.57	SA

I need trainings and seminars on how to assess student learning effectively. This could include training on how to develop and grade assessments, how to use formative and summative assessments, and how to use assessment data to inform instruction.	3.60	SA
I need trainings and seminars on how to make connections between the subject area and other subjects. This could include strategies for integrating literacy, math, science, and social studies into their curriculum.	3.57	A
Overall Mean	3.49	VH

Table 3 presents the results of a survey on the curriculum planning needs of educators. It highlights the mean scores and descriptive ratings (DR) for various indicators related to professional development in curriculum planning.
"Understanding and interpreting curriculum standards": The mean score for this indicator is 3.33, which falls into the "Agree" category. This suggests that teachers perceive a need for trainings and seminars to understand and interpret both national and local curriculum standards.

"Developing effective lesson plans": The mean score for this indicator is 3.43, indicating a "Strongly Agree" rating. This signifies a high perceived need for trainings and seminars on developing lesson plans that align with standards, have a well-structured format, and incorporate diverse teaching strategies.

"Differentiating instruction for diverse learners": This indicator also has a mean score of 3.43, reflecting a "Strongly Agree" rating. Teachers express a strong need for professional development in strategies for modifying lessons and assessments to meet the needs of diverse learners with different learning styles and abilities.

"Integrating technology into the curriculum": The mean score for this indicator is 3.57, indicating a "Strongly Agree" rating. Educators recognize the importance of trainings and seminars on effectively incorporating technology, such as educational software and online resources, into their curriculum to enhance student learning. "Assessing student learning effectively": This indicator has a mean score of 3.60, falling into the "Strongly Agree" category. Teachers express a high need for professional development in developing and grading assessments, utilizing formative and summative assessments, and using assessment data to inform instruction.

"Making connections between subject areas": The mean score for this indicator is 3.57, which corresponds to an "Agree" rating. Educators indicate a need for trainings and seminars on integrating literacy, math, science, and social studies into their curriculum, fostering interdisciplinary connections.

Overall, the table's mean score of 3.49 reflects a "Very High" rating, indicating a significant perceived need for professional development in curriculum planning among

educators. These findings emphasize the importance of providing targeted training and support to enhance educators' skills in understanding standards, developing effective lesson plans, differentiating instruction, integrating technology, assessing student learning, and making interdisciplinary connections.

Based on the mean score of 3.49 in Table 3, there is a high perceived need for professional development in curriculum planning among educators. The overall mean score falls into the "Very High" rating category, indicating that teachers strongly agree on the need for trainings and seminars in various aspects of curriculum planning. This suggests that educators recognize the importance of enhancing their skills and knowledge in areas such as understanding curriculum standards, developing effective lesson plans, differentiating instruction, integrating technology, assessing student learning, and making interdisciplinary connections. The high mean score reflects a significant perceived need for professional development in curriculum planning among educators.

Table 4: Assessment and Reporting

Indicators	**MEAN**	**DR**
I need trainings and seminars on different types of assessments, such as formative, summative, and diagnostic assessments. This includes understanding the purpose of each assessment type and how to use them effectively.	3.47	SA
I need trainings and seminars on how to develop valid and reliable assessments that align with learning objectives and standards. This could include training on creating rubrics, designing multiple-choice questions, and developing performance-based assessments.	3.33	A
I need trainings and seminars in analyzing and interpreting assessment data to inform their instruction. This could include training on how to use data to identify student strengths and weaknesses, adjust teaching strategies, and provide targeted interventions.	3.43	SA
I need trainings and seminars on how to provide constructive feedback to students that helps them understand their progress and areas for improvement. This could include training on using specific, actionable language and providing feedback that promotes growth mindset.	3.43	SA
I need trainings and seminars in implementing effective assessment strategies in their classrooms. This could include training on creating a balanced assessment plan, using technology for assessments, and incorporating authentic assessments.	3.53	SA
	3.47	SA

I need trainings and seminars on how to effectively communicate student progress to parents or guardians. This could include training on writing clear and informative progress reports, conducting parent-teacher conferences, and maintaining open lines of communication.	3.44	VH
Overall Mean		

Table 4 presents the results of a survey on the assessment and reporting needs of elementary teachers in Alilem District. It highlights the mean scores and descriptive ratings (DR) for various indicators related to professional development in assessment and reporting.

"Different types of assessments": The mean score for this indicator is 3.47, indicating a "Strongly Agree" rating. Teachers perceive a high need for trainings and seminars on understanding and effectively using different types of assessments, such as formative, summative, and diagnostic assessments.

"Developing valid and reliable assessments": The mean score for this indicator is 3.33, falling into the "Agree" category. Teachers express a need for professional development in developing assessments that align with learning objectives and standards, including the creation of rubrics, designing multiple-choice questions, and developing performance-based assessments.

"Analyzing and interpreting assessment data": This indicator has a mean score of 3.43, reflecting a "Strongly Agree" rating. Educators recognize the importance of trainings and seminars on using assessment data to inform their instruction, identify student strengths and weaknesses, adjust teaching strategies, and provide targeted interventions.

"Providing constructive feedback to students": The mean score for this indicator is 3.43, indicating a "Strongly Agree" rating. Teachers express a strong need for professional development in providing feedback that helps students understand their progress and areas for improvement, including using specific, actionable language and promoting a growth mindset.

"Implementing effective assessment strategies": This indicator has a mean score of 3.53, falling into the "Strongly Agree" category. Teachers perceive a high need for trainings and seminars on implementing effective assessment strategies in their classrooms, including creating a balanced assessment plan, using technology for assessments, and incorporating authentic assessments.

"Effectively communicating student progress to parents": The mean score for this indicator is 3.47, reflecting a "Strongly Agree" rating. Educators express a need for professional development in effectively communicating student progress to parents or guardians, including writing clear and informative progress reports, conducting parent-teacher conferences, and maintaining open lines of communication.

Overall, the table's mean score of 3.44 falls into the "Very High" rating category. This indicates a significant perceived need for professional development in assessment and reporting among elementary teachers in Alilem District. These findings emphasize the importance of providing targeted training and support to enhance educators' skills in various aspects of assessment, data analysis, feedback provision, and effective communication with parents or guardians.

Table 5: Community Linkages and Professional Engagement

Indicators	MEAN	DR
I need trainings and seminars on how to establish and maintain partnerships with community organizations, businesses, and local resources. This could include strategies for reaching out, building relationships, and collaborating on projects or initiatives.	3.57	SA
I need trainings and seminars on how to effectively engage parents and families in our students' education. This could include training on effective communication strategies, involving parents in decision-making processes, and fostering a positive home-school relationship.	3.73	SA
I need trainings and seminars in developing effective collaboration skills with our colleagues. This could include training on team teaching, co-planning lessons, and sharing best practices. PD opportunities that promote a collaborative culture and encourage peer learning can be particularly beneficial.	3.57	SA
I need trainings and seminars on how to actively participate in and contribute to professional learning communities (PLCs). This could include training on effective PLC structures, protocols for collaboration, and using PLCs as a platform for sharing ideas and resources.	3.47	SA
I need trainings and seminars on how to build and maintain professional networks. This could include training on attending conferences, joining professional organizations, and utilizing online platforms for professional networking.	3.40	A
I need trainings and seminars in pursuing continuing education and engaging in lifelong learning. This could include training on accessing professional development opportunities, exploring advanced coursework, and staying updated on current research and trends in education.	3.63	SA
Overall Mean	3.56	VH

Table 5 focuses on the community linkages and professional engagement needs of elementary teachers in Alilem District. It presents the mean scores and descriptive ratings (DR) for various indicators related to professional development in this area.

"Establishing and maintaining partnerships with community organizations": The mean score for this indicator is 3.57, indicating a "Strongly Agree" rating. Teachers express a strong need for trainings and seminars on strategies for reaching out, building relationships, and collaborating with community organizations, businesses, and local resources.

"Effectively engaging parents and families": This indicator has a mean score of 3.73, falling into the "Strongly Agree" category. Educators recognize the importance of professional development in effective communication strategies, involving parents in decision-making processes, and fostering a positive home-school relationship.

"Developing collaboration skills with colleagues": The mean score for this indicator is 3.57, reflecting a "Strongly Agree" rating. Teachers express a need for professional development opportunities that promote collaboration, such as team teaching, co-planning lessons, and sharing best practices.

"Participating in professional learning communities (PLCs)": This indicator has a mean score of 3.47, indicating a "Strongly Agree" rating. Educators express a need for trainings and seminars on effective PLC structures, collaboration protocols, and using PLCs as platforms for sharing ideas and resources.

Building and maintaining professional networks": The mean score for this indicator is 3.40, falling into the "Agree" category. Teachers express a need for professional development in building and maintaining professional networks, including attending conferences, joining professional organizations, and utilizing online platforms for networking.

"Pursuing continuing education and lifelong learning": This indicator has a mean score of 3.63, reflecting a "Strongly Agree" rating. Educators express a strong need for trainings and seminars on accessing professional development opportunities, exploring advanced coursework, and staying updated on current research and trends in education.

Overall, the table's mean score of 3.56 falls into the "Very High" rating category. This indicates a significant perceived need for professional development in community linkages and professional engagement among elementary teachers in Alilem District. These findings emphasize the importance of providing targeted training and support to enhance educators' skills in establishing community partnerships, engaging parents and families, fostering collaboration, participating in professional learning communities, building professional networks, and pursuing lifelong learning.

Table 6: Personal Growth and Professional Development

Indicators	MEAN	DR
I need trainings and seminars on self-reflection techniques, journaling, and peer observation to critically analyze the teaching methods, strategies, and interactions with students	3.67	SA
I need trainings and seminars in expanding repertoire of instructional strategies to engage students and promote active learning. This could include PD on incorporating project-based learning, inquiry-based learning, or technology-enhanced instruction.	3.33	A
I need trainings and seminars on how to effectively differentiate instruction to meet the diverse needs of the students. This could include strategies for adapting lessons, providing accommodations, and modifying assessments.	3.47	SA
I need trainings and seminars that focuses on classroom management techniques and behavior support strategies. This could include training on establishing clear expectations, implementing positive behavior interventions, and fostering a positive classroom culture.	3.33	A
I need trainings and seminars on how to effectively integrate technology into the teaching practice. This could include training on using educational apps, online resources, and digital tools to enhance instruction and student engagement.	3.47	SA
I need trainings and seminars that enhances the cultural competence and equips them with strategies to create an inclusive and equitable classroom environment. This could include training on culturally responsive teaching, addressing bias, and promoting social justice in the classroom.	3.47	SA
I need trainings and seminars in developing leadership skills and pursuing opportunities for professional growth. This could include PD on mentorship, instructional coaching, and pathways for career advancement.	3.70	SA
Overall Mean	3.50	VH

Table 6 focuses on the personal growth and professional development needs of elementary teachers in Alilem District. It presents the mean scores and descriptive ratings (DR) for various indicators related to professional development in this area.

"Self-reflection techniques, journaling, and peer observation": The mean score for this indicator is 3.67, indicating a "Strongly Agree" rating. Teachers express a strong need for trainings and seminars on self-reflection techniques, journaling, and peer observation to critically analyse their teaching methods, strategies, and interactions with students.

"Expanding repertoire of instructional strategies": This indicator has a mean score of 3.33, falling into the "Agree" category. Educators express a need for professional development in expanding their repertoire of instructional strategies to engage students and promote active learning. This could include training on project-based learning, inquiry-based learning, or technology-enhanced instruction.

"Effectively differentiating instruction": The mean score for this indicator is 3.47, reflecting a "Strongly Agree" rating. Teachers express a need for trainings and seminars on effectively differentiating instruction to meet the diverse needs of their students. This includes strategies for adapting lessons, providing accommodations, and modifying assessments.

"Classroom management techniques and behaviour support strategies": This indicator also has a mean score of 3.33, indicating an Agree" rating. Educators express a need for professional development in classroom management techniques and behaviour support strategies. This could include training on establishing clear expectations, implementing positive behaviour interventions, and fostering a positive classroom culture.

"Effectively integrating technology": The mean score for this indicator is 3.47, falling into the "Strongly Agree" category. Teachers express a need for trainings and seminars on effectively integrating technology into their teaching practice. This includes training on using educational apps, online resources, and digital tools to enhance instruction and student engagement.

"Enhancing cultural competence and creating an inclusive and equitable classroom environment": This indicator has a mean score of 3.47, reflecting a "Strongly Agree" rating. Educators express a need for professional development in enhancing their cultural competence and equipping themselves with strategies to create an inclusive and equitable classroom environment. This could include training on culturally responsive teaching, addressing bias, and promoting social justice in the classroom.

"Developing leadership skills and pursuing professional growth": The mean score for this indicator is 3.70, indicating a "Strongly Agree" rating. Teachers express a strong need for trainings and seminars in developing leadership skills and pursuing opportunities for professional growth. This could include professional development on mentorship, instructional coaching, and pathways for career advancement.

Overall, the table's mean score of 3.50 falls into the "Very High" rating category. This indicates a significant perceived need for personal growth and professional development among elementary teachers in Alilem District. These findings emphasize

the importance of providing targeted training and support to enhance educators' skills in self-reflection, instructional strategies, differentiation, classroom management, technology integration, cultural competence, and leadership development.

Table 7**:** Plus Factor

Indicators	**MEAN**	**DR**
I need trainings and seminars on how to develop well-structured and engaging lesson plans. This could include training on aligning objectives, incorporating different instructional strategies, and utilizing appropriate resources.	3.67	SA
I need trainings and seminars on classroom management strategies that help in creating a positive and productive learning environment. This could include training on establishing routines, managing transitions, and addressing student behavior effectively.	3.63	SA
I need trainings and seminars in implementing differentiated instruction to meet the diverse needs of the students. PD in this area could focus on strategies for adapting content, process, and products to accommodate various learning styles and abilities.	3.70	SA
I need trainings and seminars on effective questioning techniques can help teachers engage students in critical thinking and promote deeper understanding. This could include training on asking open-ended questions, using probing techniques, and facilitating meaningful discussions.	3.57	SA
I need trainings and seminars on designing and implementing formative and summative assessments. This could include training on creating rubrics, providing constructive feedback, and using assessment data to inform instruction.	3.47	SA
I need trainings and seminars on integrating technology into teaching practices can help teachers leverage digital tools and resources to enhance instruction and student engagement. This could include training on using educational apps, online platforms, and multimedia resources effectively.	3.40	A
I need trainings and seminars on collaborative learning strategies that can support teachers in promoting teamwork, communication, and problem-solving skills among students. This could include training on cooperative learning structures, group work facilitation, and fostering a collaborative classroom culture.	3.63	SA
Overall Mean	3.54	VH

Table 7 focuses on the plus factors, or additional areas of professional development needs, of elementary teachers in Alilem District. It presents the mean scores and descriptive ratings (DR) for various indicators related to professional development in these areas.

"Developing well-structured and engaging lesson plans": The mean score for this indicator is 3.67, indicating a "Strongly Agree" rating. Teachers express a strong need for trainings and seminars on developing lesson plans that are well-structured and engaging, including aligning objectives, incorporating different instructional strategies, and utilizing appropriate resources.

"Classroom management strategies": This indicator has a mean score of 3.63, falling into the "Strongly Agree" category. Educators express a need for professional development in classroom management strategies that help create a positive and productive learning environment. This could include training on establishing routines, managing transitions, and addressing student behavior effectively.

"Implementing differentiated instruction": The mean score for this indicator is 3.70, reflecting a "Strongly Agree" rating. Teachers express a strong need for professional development in implementing differentiated instruction to meet the diverse needs of their students. This could focus on strategies for adapting content, process, and products to accommodate various learning styles and abilities.

"Effective questioning techniques": This indicator has a mean score of 3.57, indicating a "Strongly Agree" rating. Educators express a need for trainings and seminars on effective questioning techniques that can engage students in critical thinking and promote deeper understanding. This could include training on asking open-ended questions, using probing techniques, and facilitating meaningful discussions.

"Designing and implementing assessments": The mean score for this indicator is 3.47, falling into the "Strongly Agree" category. Teachers express a need for professional development in designing and implementing formative and summative assessments. This could include training on creating rubrics, providing constructive feedback, and using assessment data to inform instruction.

"Integrating technology into teaching practices": This indicator has a mean score of 3.40, indicating an "Agree" rating. Educators express a need for trainings and seminars on integrating technology into their teaching practices to enhance instruction and student engagement. This could include training on using educational apps, online platforms, and multimedia resources effectively.

"Collaborative learning strategies": The mean score for this indicator is 3.63, reflecting a "Strongly Agree" rating. Teachers express a need for professional development in collaborative learning strategies that support promoting teamwork, communication, and problem-solving skills among students. This could include training

on cooperative learning structures, group work facilitation, and fostering a collaborative classroom culture.

Overall, the table's mean score of 3.54 falls into the "Very High" rating category. This indicates a significant perceived need for professional development in these plus factors among elementary teachers in Alilem District. These findings highlight the importance of providing targeted training and support to enhance educators' skills in lesson planning, classroom management, differentiated instruction, questioning techniques, assessment design, technology integration, and collaborative learning strategies.

SUMMARY TABLE

PART I: What is the level of perception of the teachers on their professional needs along:

TABLE		MEAN	DR
1	Content Knowledge on Pedagogy	3.70	VH
2	Learning Environment and Diversity of Learners	3.53	VH
3	Curriculum Planning	3.49	VH
4	Assessment and Reporting	3.44	VH
5	Community Linkages and Professional Engagement	3.56	VH
6	Personal Growth and Professional Development	3.50	VH
7	Plus Factor	3.54	VH
	Overall Mean	3.54	VH

The summary table provides an overview of the level of perception among elementary teachers in Alilem District regarding their professional development needs in different areas. The table includes the mean scores and descriptive ratings (DR) for each category.

Content Knowledge on Pedagogy: The mean score is 3.70, indicating a "Very High" rating. Teachers perceive a strong need for professional development in enhancing their content knowledge and pedagogical skills.

Learning Environment and Diversity of Learners: The mean score is 3.53, falling into the "Very High" category. Educators express a significant need for professional development in creating inclusive and supportive learning environments that cater to the diverse needs of their students.

Curriculum Planning: The mean score is 3.49, reflecting a "Very High" rating. Teachers recognize the importance of professional development in curriculum planning, including understanding curriculum standards and developing effective lesson plans.

Assessment and Reporting: The mean score is 3.44, indicating a "Very High" rating. Educators perceive a high need for professional development in various aspects of assessment and reporting, such as understanding different assessment types and analyzing assessment data.

Community Linkages and Professional Engagement: The mean score is 3.56, falling into the "Very High" category. Teachers express a significant need for professional development in establishing partnerships with community organizations, engaging parents, and collaborating with colleagues.

Personal Growth and Professional Development: The mean score is 3.50, reflecting a "Very High" rating. Educators recognize the importance of personal growth and ongoing professional development in areas such as self-reflection, instructional strategies, and leadership skills.

Plus- Factor: The mean score is 3.54, indicating a "Very High" rating. Teachers express a strong need for professional development in additional areas such as lesson planning, classroom management, differentiated instruction, and technology integration. Overall, the table's mean score of 3.54 falls into the "Very High" rating category. This indicates a significant perceived need for professional development among elementary teachers in Alilem District across various areas. These findings highlight the importance of providing targeted and comprehensive faculty development programs that address the identified professional needs of the teachers.

Based on the summary table, the areas of professional development that elementary teachers in Alilem District perceive as their highest priority are: Content Knowledge on Pedagogy: This category received the highest mean score of 3.70, indicating a "Very High" rating. Teachers prioritize enhancing their content knowledge and pedagogical skills to effectively deliver instruction to their students. Personal Growth and Professional Development: This category received a mean score of 3.50, also falling into the "Very High" rating. Teachers prioritize their personal growth and ongoing professional development in areas such as self-reflection, instructional strategies, and leadership skills. Plus- Factor: This category received a mean score of 3.54, reflecting a "Very High" rating. Teachers prioritize additional areas of professional development, such as lesson planning, classroom management, differentiated instruction, effective questioning techniques, assessment design, technology integration, and collaborative learning strategies.

While all categories in the summary table indicate a high level of perceived need for professional development, the areas of content knowledge on pedagogy, personal growth and professional development, and the plus factor seem to be the highest priorities for elementary teachers in Alilem District. These areas reflect the teachers' desire to enhance their teaching skills, create a positive learning environment, and continuously improve their practice to meet the diverse needs of their students.

Part II: Level of agreement of teachers on the factors that affect their professional development

Table 1: Personal Factor

Indicators	MEAN	DR
Teachers' personal teaching philosophies and beliefs about education can influence their PD needs. For example, a teacher who values student-centered learning may seek PD opportunities that focus on inquiry-based teaching methods or student engagement strategies.	3.87	SA
Teachers' career aspirations and professional goals can drive their PD needs. Some teachers may aspire to take on leadership roles, such as becoming a department head or instructional coach, and may require PD in areas like instructional leadership, mentoring, or curriculum development.	3.90	SA
Teachers' personal interests and passions can shape their PD needs. They may seek opportunities to deepen their knowledge and skills in specific subject areas, instructional methods, or educational approaches that align with their interests and passions.	3.87	SA
Teachers' self-assessment of their strengths and areas for growth can influence their PD needs. They may seek PD opportunities that build on their strengths or address specific areas where they feel they need improvement.	3.90	SA
Teachers' preferred learning styles and preferences can impact their PD needs. Some teachers may prefer hands-on workshops or collaborative learning experiences, while others may prefer self-paced online courses or reading professional literature.	3.87	SA
Teachers' personal circumstances, such as family responsibilities or other commitments, can impact their PD needs. They may require flexible PD options that accommodate their work-life balance and time constraints.	3.90	SA
Teachers' motivation and commitment to continuous learning can influence their PD needs. Some teachers may be highly motivated to seek out PD opportunities and take initiative in their professional growth, while others may require additional support or encouragement.	3.87	SA
Overall mean	3.88	VH

Table 1 focuses on the personal factors that can influence the professional development (PD) needs of elementary teachers in Alilem District. It presents the mean

scores and descriptive ratings (DR) for each indicator.

Teachers' personal teaching philosophies and beliefs: The mean score for this indicator is 3.87, indicating a "Strongly Agree" rating. Teachers' personal teaching philosophies and beliefs about education can influence their PD needs. For example, teachers who value student-centered learning may seek PD opportunities that focus on inquiry-based teaching methods or student engagement strategies.

Teachers' career aspirations and professional goals: This indicator has a mean score of 3.90, falling into the "Strongly Agree" category. Teachers' career aspirations and professional goals can drive their PD needs. Some teachers may aspire to take on leadership roles, such as becoming a department head or instructional coach, and may require PD in areas like instructional leadership, mentoring, or curriculum development. Teachers' personal interests and passions: The mean score for this indicator is 3.87, reflecting a "Strongly Agree" rating. Teachers' personal interests and passions can shape their PD needs. They may seek opportunities to deepen their knowledge and skills in specific subject areas, instructional methods, or educational approaches that align with their interests and passions.

Teachers' self-assessment of strengths and areas for growth: This indicator also has a mean score of 3.90, indicating a "Strongly Agree" rating. Teachers' self-assessment of their strengths and areas for growth can influence their PD needs. They may seek PD opportunities that build on their strengths or address specific areas where they feel they need improvement.

Teachers' preferred learning styles and preferences: The mean score for this indicator is 3.87, falling into the "Strongly Agree" category. Teachers' preferred learning styles and preferences can impact their PD needs. Some teachers may prefer hands-on workshops or collaborative learning experiences, while others may prefer self-paced online courses or reading professional literature.

Teachers' personal circumstances: The mean score for this indicator is 3.90, reflecting a "Strongly Agree" rating. Teachers' personal circumstances, such as family responsibilities or other commitments, can impact their PD needs. They may require flexible PD options that accommodate their work-life balance and time constraints.

Teachers' motivation and commitment to continuous learning: The mean score for this indicator is 3.87, indicating a "Strongly Agree" rating. Teachers' motivation and commitment to continuous learning can influence their PD needs. Some teachers may be highly motivated to seek out PD opportunities and take initiative in their professional growth, while others may require additional support or encouragement.

Overall, the table's mean score of 3.88 falls into the "Very High" rating category. This indicates a significant level of agreement among elementary teachers in Alilem District regarding the personal factors that can influence their PD needs. These findings highlight the importance of considering teachers' personal beliefs, goals, interests, self-assessment, learning styles, circumstances, motivation, and commitment when designing and implementing faculty development programs. Providing personalized and tailored PD

opportunities that align with these personal factors can enhance teachers' engagement and effectiveness in their professional growth.

Table 2: Financial Factor

Indicators	MEAN	DR
Teachers may consider the cost associated with PD opportunities when determining their needs. Some PD programs or workshops may require registration fees, travel expenses, or materials costs. Teachers with limited financial resources may need to prioritize or seek out more affordable options.	3.93	SA
The availability of funding or financial support for PD can significantly impact teachers' ability to pursue their desired professional development. Teachers may seek out grants, scholarships, or district-sponsored funding opportunities to support their PD needs.	3.90	SA
Financial constraints can affect teachers' access to PD resources. Teachers in low-income schools or districts with limited budgets may have fewer opportunities for PD, such as attending conferences, purchasing instructional materials, or accessing online courses.	3.90	SA
Financial incentives or compensation for participating in PD can influence teachers' motivation to engage in professional development. Offering stipends, salary increases, or reimbursements for PD-related expenses can encourage teachers to invest in their professional growth.	3.93	SA
Financial considerations can also play a role in teachers' PD needs when it comes to career advancement. Teachers seeking promotions or higher-paying positions may prioritize PD opportunities that align with their career goals and offer potential financial benefits.	3.90	SA
Teachers' personal financial situations can impact their ability to allocate resources towards PD. Financial obligations, such as student loans, mortgages, or supporting dependents, may limit the amount of money teachers can invest in PD opportunities	3.90	SA
Overall Mean	3.92	VH

Table 2 focuses on the financial factors that can impact the professional development (PD) needs of elementary teachers in Alilem District. It presents the mean scores and descriptive ratings (DR) for each indicator.

Cost associated with PD opportunities: The mean score for this indicator is 3.93, indicating a "Strongly Agree" rating. Teachers consider the cost associated with PD opportunities when determining their needs. Some PD programs or workshops may require registration fees, travel expenses, or materials costs. Teachers with limited financial resources may need to prioritize or seek out more affordable options. Availability of funding or financial support for PD: This indicator has a mean score of 3.90, falling into the "Strongly Agree" category. Teachers acknowledge that the availability of funding or financial support for PD can significantly impact their ability to pursue their desired professional development. They may seek out grants, scholarships, or district-sponsored funding opportunities to support their PD needs.

Financial constraints and access to PD resources: The mean score for this indicator is 3.90, reflecting a "Strongly Agree" rating. Financial constraints can affect teachers' access to PD resources, particularly for those in low-income schools or districts with limited budgets. They may have fewer opportunities for PD, such as attending conferences, purchasing instructional materials, or accessing online courses.

Financial incentives or compensation for participating in PD: This indicator also has a mean score of 3.93, indicating a "Strongly Agree" rating. Teachers recognize that financial incentives or compensation for participating in PD can influence their motivation to engage in professional development. Offering stipends, salary increases, or reimbursements for PD-related expenses can encourage teachers to invest in their professional growth.

Financial considerations and career advancement: The mean score for this indicator is 3.90, falling into the "Strongly Agree" category. Financial considerations can play a role in teachers' PD needs when it comes to career advancement. Teachers seeking promotions or higher-paying positions may prioritize PD opportunities that align with their career goals and offer potential financial benefits.

Personal financial situations and allocation of resources: The mean score for this indicator is 3.90, reflecting a "Strongly Agree" rating. Teachers' personal financial situations can impact their ability to allocate resources towards PD. Financial obligations, such as student loans, mortgages, or supporting dependents, may limit the amount of money teachers can invest in PD opportunities.

Overall, the table's mean score of 3.92 falls into the "Very High" rating category. This indicates a significant level of agreement among elementary teachers in Alilem District regarding the financial factors that can impact their PD needs. These findings highlight the importance of considering the financial implications and providing support in terms of funding, grants, incentives, and affordable options when designing and implementing faculty development programs. Ensuring equitable access to PD resources is crucial to support teachers' professional growth and advancement.

Table 3: School-Related

Indicators	MEAN	DR
The school's culture and vision can shape teachers' PD needs. A school that values innovation and student-centered learning may require PD opportunities that align with these priorities, such as training on project-based learning or technology integration.	3.97	SA
The support and encouragement provided by school leaders can impact teachers' PD needs. When school leaders prioritize and invest in teacher development, it can create a culture of continuous learning and support teachers' desire for PD in various areas	4.00	SA
School-wide curriculum or instructional initiatives can influence teachers' PD needs. For example, if a school adopts a new instructional approach, such as blended learning or competency-based education, teachers may require PD to effectively implement these strategies.	3.97	SA
The availability of resources, both financial and material, can impact teachers' PD needs. Schools that provide funding for PD opportunities, access to instructional materials, and technology resources can better support teachers' professional growth.	3.97	SA
Collaborative opportunities within the school community can shape teachers' PD needs. Professional learning communities, grade-level or subject-area teams, and collaborative planning time can support teachers in sharing best practices, learning from one another, and identifying areas for professional growth.	4.00	SA
The school's approach to data and assessment can impact teachers' PD needs. If a school emphasizes data-driven instruction or formative assessment practices, teachers may require PD on data analysis, using assessment data to inform instruction, or designing effective assessments.	3.93	SA
The school's PD policies and support mechanisms can influence teachers' PD needs. Schools that provide dedicated PD time, mentorship programs, or opportunities for peer observation and feedback can better address teachers' individual needs and promote their professional growth.	3.97	SA
The characteristics and needs of the student population can impact teachers' PD needs. Schools with diverse student populations, including English language learners, students with special needs, or gifted students, may require PD opportunities that focus on meeting the unique needs of these students.	3.97	SA

Overall Mean	3.95	VH

Table 3 focuses on the school-related factors that can influence the professional development (PD) needs of elementary teachers in Alilem District. It presents the mean scores and descriptive ratings (DR) for each indicator.

School's culture and vision: The mean score for this indicator is 3.97, indicating a "Strongly Agree" rating. The school's culture and vision can shape teachers' PD needs. A school that values innovation and student-centered learning may require PD opportunities that align with these priorities, such as training on project-based learning or technology integration.

Support and encouragement from school leaders: This indicator has a mean score of 4.00, falling into the "Strongly Agree" category. The support and encouragement provided by school leaders can significantly impact teachers' PD needs. When school leaders prioritize and invest in teacher development, it creates a culture of continuous learning and supports teachers' desire for PD in various areas.

School-wide curriculum or instructional initiatives: The mean score for this indicator is 3.97, reflecting a "Strongly Agree" rating. School-wide curriculum or instructional initiatives can influence teachers' PD needs. For example, if a school adopts a new instructional approach, such as blended learning or competency-based education, teachers may require PD to effectively implement these strategies.

Availability of resources: The mean score for this indicator is 3.97, indicating a "Strongly Agree" rating. The availability of resources, both financial and material, can impact teachers' PD needs. Schools that provide funding for PD opportunities, access to instructional materials, and technology resources can better support teachers' professional growth.

Collaborative opportunities within the school community: This indicator has a mean score of 4.00, falling into the "Strongly Agree" category. Collaborative opportunities within the school community, such as professional learning communities, grade-level or subject-area teams, and collaborative planning time, can shape teachers' PD needs. These opportunities support teachers in sharing best practices, learning from one another, and identifying areas for professional growth.

School's approach to data and assessment: The mean score for this indicator is 3.93, reflecting a "Strongly Agree" rating. The school's approach to data and assessment can impact teachers' PD needs. If a school emphasizes data-driven instruction or formative assessment practices, teachers may require PD on data analysis, using assessment data to inform instruction, or designing effective assessments.

School's PD policies and support mechanisms: The mean score for this indicator is 3.97, indicating a "Strongly Agree" rating. The school's PD policies and support

mechanisms can influence teachers' PD needs. Schools that provide dedicated PD time, mentorship programs, or opportunities for peer observation and feedback can better address teachers' individual needs and promote their professional growth. Characteristics and needs of the student population: The mean score for this indicator is 3.97, falling into the "Strongly Agree" category. The characteristics and needs of the student population can impact teachers' PD needs. Schools with diverse student populations, including English language learners, students with special needs, or gifted students, may require PD opportunities that focus on meeting the unique needs of these students.

Overall, the table's mean score of 3.95 falls into the "Very High" rating category. This indicates a significant level of agreement among elementary teachers in Alilem District regarding the school-related factors that can influence their PD needs. These findings highlight the importance of creating a supportive school culture, providing resources and collaborative opportunities, aligning PD with school initiatives, and implementing effective PD policies to address teachers' professional development needs.

SUMMARY TABLE:
Part II: What is the level of agreement of teachers on the factors that affect their professional development?

Table		MEAN	DR
1	Personal Factor	3.88	SA
2	Financial Factor	3.92	SA
3	School- Related	3.95	SA
	Overall Mean	3.92	VH

The summary table provides an overview of the level of agreement among elementary teachers in Alilem District regarding the factors that affect their professional development (PD). The table includes the mean scores and descriptive ratings (DR) for each factor.

Personal Factor: The mean score for this factor is 3.88, indicating a "Strongly Agree" rating. Teachers show a high level of agreement on the personal factors that influence their PD needs, such as their teaching philosophies, career aspirations, personal interests, self-assessment, preferred learning styles, personal circumstances, and motivation for continuous learning.

Financial Factor: The mean score for this factor is 3.92, falling into the "Strongly Agree" category. Teachers demonstrate a strong level of agreement on the financial factors that impact their PD opportunities, including the cost of PD, availability of funding or financial support, financial constraints, financial incentives, and personal financial situations.

School-Related Factor: The mean score for this factor is 3.95, reflecting a "Strongly Agree" rating. Teachers exhibit a high level of agreement on the school-related factors that affect their PD needs, such as the school's culture and vision, support from school leaders, school-wide curriculum or instructional initiatives, availability of resources, collaborative opportunities, approach to data and assessment, PD policies and support mechanisms, and characteristics and needs of the student population.

Overall, the table's mean score of 3.92 falls into the "Very High" rating category. This indicates a significant level of agreement among elementary teachers in Alilem District regarding the factors that influence their professional development. These findings highlight the importance of considering personal, financial, and school-related factors when designing and implementing a localized framework for faculty development. By addressing these factors, education stakeholders can better meet the PD needs of teachers and support their continuous growth and improvement.

Conclusions

PART I: What is the level of perception of the teachers on their professional needs along:

TABLE		MEAN	DR
1	Content Knowledge on Pedagogy	3.70	VH
2	Learning Environment and Diversity of Learners	3.53	VH
3	Curriculum Planning	3.49	VH
4	Assessment and Reporting	3.44	VH
5	Community Linkages and Professional Engagement	3.56	VH
6	Personal Growth and Professional Development	3.50	VH
7	Plus- Factor	3.54	VH
		3.54	VH
	Overall Mean		

Part II: What is the level of agreement of teachers on the factors that affect their professional development?

Table		MEAN	DR
1	Personal Factor	3.88	SA
2	Financial Factor	3.92	SA
3	School- Related	3.95	SA
		3.92	VH
	Overall Mean		

The two tables provide insights into the level of perception and agreement among teachers in Alilem District regarding their professional development needs. Table 1 highlights the level of perception among teachers on their professional needs in various areas. The mean scores and descriptive ratings indicate a "Very High" level of perception in each area, including content knowledge on pedagogy, learning environment and diversity of learners, curriculum planning, assessment and reporting, community linkages

and professional engagement, personal growth and professional development, and the plus factor. This suggests that teachers in Alilem District have a strong awareness of their professional development needs in these domains.

Table 2 focuses on the level of agreement among teachers regarding the factors that affect their professional development. The mean scores and descriptive ratings indicate a "Strongly Agree" level of agreement across the three factors: personal factor, financial factor, and school-related factor. This suggests that teachers in Alilem District are in agree about the influence of personal, financial, and school-related factors on their professional development needs.

Overall, these tables indicate that teachers in Alilem District have a strong perception of their professional development needs and are in agree about the factors that impact their development. This suggests a collective understanding and alignment among teachers regarding their strengths and weaknesses in professional development. The "Very High" level of perception and agreement highlight the potential for designing and implementing a localized framework for faculty development that addresses the identified needs and leverages the agreed-upon factors.

By capitalizing on the strengths identified in Table 1, such as content knowledge, learning environment, curriculum planning, assessment, community engagement, personal growth, and the plus factor, the district can build on these areas of expertise and provide targeted support and resources to further enhance teachers' professional development. Additionally, the agreement on the personal, financial, and school-related factors in Table 2 indicates the need to consider these factors in the design and implementation of faculty development initiatives. This can involve providing financial support, creating a supportive school culture, and fostering collaborative opportunities to address the identified needs.

Overall, these tables provide valuable insights for developing a localized framework for faculty development in Alilem District. By leveraging the strengths and addressing the identified needs, the district can create a tailored and effective professional development program that meets the specific requirements of teachers and ultimately improves their teaching practices and student outcomes.

A possible localized framework for faculty development in Alilem District can include the following components: Needs Assessment: Conduct a thorough needs assessment to identify the specific professional development needs of teachers in Alilem District. This can involve surveys, focus groups, and interviews to gather input from teachers, administrators, and other stakeholders. The needs assessment should consider the perceived needs highlighted in the previous tables, as well as any additional areas of focus that emerge.

Goal Setting: Based on the needs- assessment, establish clear and measurable goals for faculty development in Alilem District. These goals should align with the identified needs and the overall vision and mission of the district. Setting specific goals

will provide a framework for designing and evaluating the effectiveness of professional development initiatives.

Targeted Professional Development Programs: Develop targeted professional development programs that address the identified needs of teachers. These programs should be designed to enhance teachers' knowledge and skills in areas such as content knowledge on pedagogy, learning environment and diversity of learners, curriculum planning, assessment and reporting, community linkages and professional engagement, personal growth and professional development, and the plus factor. The programs can include workshops, seminars, online courses, and coaching or mentoring opportunities.

Differentiated Support: Recognize that teachers have diverse needs and provide differentiated support based on their individual requirements. This can involve offering a variety of professional development opportunities that cater to different learning styles, experience levels, and subject areas. By providing differentiated support, the district can ensure that all teachers receive the necessary resources and guidance to meet their specific professional development needs.

Collaborative Learning Communities: Foster collaborative learning communities where teachers can engage in peer-to-peer learning and share best practices. This can be achieved through the establishment of professional learning communities (PLCs), grade-level or subject-area teams, and regular opportunities for collaboration and reflection. Collaborative learning communities provide a platform for teachers to learn from one another, exchange ideas, and collectively improve their teaching practices.

Mentoring and Coaching: Implement mentoring and coaching programs to support the professional growth of teachers. Experienced teachers can serve as mentors or coaches to provide guidance, feedback, and support to their colleagues. Mentoring and coaching relationships can help teachers refine their teaching practices, navigate challenges, and develop new skills.

Ongoing Support and Resources: Ensure that teachers have access to ongoing support and resources to facilitate their professional development. This can include providing instructional materials, technology tools, research-based resources, and opportunities for continued learning. Ongoing support and resources will enable teachers to stay updated with current pedagogical approaches and enhance their teaching practices.

Evaluation and Reflection: Regularly evaluate the effectiveness of the faculty development initiatives and encourage teachers to engage in reflection on their professional growth. This can involve collecting feedback from teachers, conducting self-assessments, and using data to inform future professional development efforts. Evaluation and reflection will help identify areas of success and areas for improvement within the faculty development framework.

By implementing a localized framework that incorporates these components, Alilem District can provide targeted and effective support for teachers' professional development. This framework will empower teachers to enhance their teaching practices, improve student learning outcomes, and contribute to the overall quality of education in the district.

Professional development for teachers is widely recognized as an essential component of a comprehensive system of teaching and learning. Here are some materials that corroborate the importance of professional development for teachers:

According to Hammond and Hyler (2017), well-designed and implemented professional development should be considered an essential component of a comprehensive system of teaching and learning. It supports students in developing the knowledge, skills, and competencies they need to thrive in the 21st century. Professional learning should be linked to teachers' experiences in preparation and induction, teaching standards, and evaluation. It should also bridge to leadership opportunities, ensuring a comprehensive system focused on the growth and development of teachers.

Worth and Van den Brande (2020) found that teachers express higher job satisfaction when they have autonomy over their own professional development. Allowing teachers to have a say in their learning and providing opportunities for personalized and self-directed professional development can contribute to their overall satisfaction and growth as educators.

These materials highlight the importance of professional development for teachers in enhancing their teaching practices, adapting to changing student needs, and fostering job satisfaction. By investing in effective professional development programs, districts can support the continuous growth and development of their teachers, ultimately benefiting student learning outcomes.

Recommendations

Based on the insights provided by the tables and the importance of professional development for teachers, the following recommendations can be constructed;

1. Conduct a thorough needs assessment: Start by conducting a comprehensive needs assessment to identify the specific professional development needs of teachers in Alilem District. This can be done through surveys, focus groups, and interviews involving teachers, administrators, and other stakeholders. The needs assessment should consider the perceived needs highlighted in the tables and any additional areas of focus that emerge.

2. Establish clear and measurable goals: Based on the needs assessment, establish clear and measurable goals for faculty development in Alilem District. These

goals should align with the identified needs and the overall vision and mission of the district. Setting specific goals will provide a framework for designing and evaluating the effectiveness of professional development initiatives.

3. Develop targeted professional development programs: Design targeted professional development programs that address the identified needs of teachers. These programs should focus on enhancing teachers' knowledge and skills in areas such as content knowledge on pedagogy, learning environment and diversity of learners, curriculum planning, assessment and reporting, community linkages and professional engagement, personal growth and professional development, and the plus factor. The programs can include workshops, seminars, online courses, and coaching or mentoring opportunities

. 4. Provide differentiated support: Recognize that teachers have diverse needs and provide differentiated support based on their individual requirements. Offer a variety of professional development opportunities that cater to different learning styles, experience levels, and subject areas. By providing differentiated support, the district can ensure that all teachers receive the necessary resources and guidance to meet their specific professional development needs

5. Foster collaborative learning communities: Create collaborative learning communities where teachers can engage in peer-to-peer learning and share best practices. Establish professional learning communities (PLCs), grade-level or subject-area teams, and regular opportunities for collaboration and reflection. Collaborative learning communities provide a platform for teachers to learn from one another, exchange ideas, and collectively improve their teaching practices.

6. Implement mentoring and coaching programs: Implement mentoring and coaching programs to support the professional growth of teachers. Experienced teachers can serve as mentors or coaches to provide guidance, feedback, and support to their colleagues. Mentoring and coaching relationships can help teachers refine their teaching practices, navigate challenges, and develop new skills.

7. Ensure ongoing support and resources: Ensure that teachers have access to ongoing support and resources to facilitate their professional development. This can include providing instructional materials, technology tools, research-based resources, and opportunities for continued learning. Ongoing support and resources will enable teachers to stay updated with current pedagogical approaches and enhance their teaching practices

8. Regularly evaluate and reflect: Regularly evaluate the effectiveness of the faculty development initiatives and encourage teachers to engage in reflection on their professional growth. Collect feedback from teachers, conduct self-assessments, and use data to inform future professional development efforts. Evaluation and reflection will help

identify areas of success and areas for improvement within the faculty development framework

By implementing a localized framework that incorporates these recommendations, Alilem District can provide targeted and effective support for teachers' professional development. This framework will empower teachers to enhance their teaching **practices** to stay updated with current pedagogical approaches and enhance their teaching practices.

Compliance with Ethical Standards

In conducting this research study, I, the author, affirm my adherence to the highest ethical standards. I hereby declare that:

All participants were fully informed about the nature and objectives of the study before their participation. I obtained informed consent from each participant, ensuring they understood their rights and the scope of the study.

In this study was entirely voluntary. All respondents were informed that they could withdraw from the study at any time without any consequences.

I have maintained the anonymity and confidentiality of all participants. Personal identifiers have been removed or masked to protect participants' privacy.

The well-being and safety of the participants were paramount throughout the study. Measures were taken to minimize any potential risks or discomfort to participants.

I declare that there is no conflict of interest that could have influenced the conduct or the results of the study. The research was conducted objectively and impartially.

I have strictly avoided plagiarism. All sources of information and data have been appropriately cited, and the work presented is original and authentic.

I have conducted this study with an unbiased approach. The interpretation of the findings was made without prejudice, and care was taken to ensure the accuracy and reliability of the results.

The results of this study have been used purely for research purposes. They are intended to contribute to the academic community's understanding of the subject matter and are not used for any commercial benefit.

By making this declaration, I affirm my commitment to conducting research that is ethically sound and responsible. I understand the importance of ethical standards in research and have endeavored to uphold these principles throughout my study.

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RESHUFFLING OF STATIONS AMONG SCHOOL HEADS IN THE MUNICIPALITY OF TANTANGAN: A PHENOMENOLOGICAL STUDY

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ABSTRACT

A school environment with a negative school climate, an authoritarian management approach, and incomplete collegiality may negatively affect the quality of the teacher. The study aimed to explore the reshuffling of stations among school heads in the municipality of Tantangan. This research used qualitative research which is a research approach that allows the researcher to interpret the life of people to understand their problems better and deeper to generate solutions that are relevant to their situations. The participants of the study are 9 school heads who are being reshuffled or transferred to the new station for the school year 2023-2024. A semi-structured guide survey questionnaire was used to collect the necessary information and responses from the participants of the study. Thematic analysis was used to process the responses of the participants. On the unexpected and sudden changes in their new station as school head, the following themes are generated based on the responses of the teacher participants of the study, adjusting and adapting to the new environment, prioritizing tasks, and open communication. On the new information and perspectives to better understand uncertain situations that may occur in their new station, the following themes were generated based on the statement of the teacher participants of the study, salient information from stakeholders, and the right direction in making decisions. On their mechanism in seeking out diverse perspectives and input to better understand complex situations, teamwork, and cooperation. Interestingly, on how they manage their emotions and reactions in ambiguous situations, Value of Understanding Code of Professional Ethics.

Keywords*: Reshuffling, School Head, Stations, Tantangan*

INTRODUCTION

Public schools and school systems, as they are presently constituted, are simply not led in ways that enable them to respond to the increasing demands they face under standards-based reform. Further, if schools, school systems, and their leaders respond to standards-based reforms the way they have responded to other attempts at broad-scale reform of public education over the past century, they will fail massively and visibly, with an attendant loss of public confidence and serious consequences for public education. The way out of this problem is through the large-scale improvement of instruction, something public education has been unable to do to date, but which is possible with dramatic changes in the way public schools define and practice leadership.

All these systems are interconnected, which in turn creates even more variables as these open systems reshape constraints and possibilities. This never-before-seen dynamic requires us to use a systemic approach and engage in complex decision-making. We all say that leadership is just not about the title or power; Leaders need to be bold, brave, daring, open, vulnerable, and sensitive, to lead wisely. However, the true test of effective leadership in an organization is not how they perform in good times, but more in times of crisis; which has left many of us feeling frightened and uncertain, Baron, L., Rouleau, V., Gregoire, S., & Baron, C. (2018).

Many people have experienced frustration and stress during the pandemic and many schools have struggled on how to continue in these challenging times. Therefore, school leaders need to stand up and do the right things for both their personnel and partly for the educational system.

Leadership can also be described as the act of guiding or influencing other individuals or groups. Experienced school leaders will come to know that flexibility in their approach is one of the key components to being an effective leader, especially this time. While it is important to stick to their core values, leaders must adapt to ongoing situations and be ready to take the initiative to navigate what is present. We cannot predict the future, instead, it is important to support our vision with a set of flexible approaches. In recent times, the ongoing global pandemic has brought challenges to everyone in their unique circumstances, Bennett, N., & Lemoine, G. J. (2014).

The Division of South Cotabato particularly in Tantangan 1 district implemented the Rationalization Plan where school heads are transferred to another school for more or less three years staying in their current school, thus this study was conceptualized to explore the Volatile, Uncertain, Complex, Ambiguous (VUCA) environment of the school head in their new station.

Research Questions

The study focuses on the leading schools in a Volatile, Uncertain, Complex, Ambiguous (VUCA) world. Specifically, the study was carried out with the following objectives;

1. What are the unexpected and sudden changes in your work in your new station?
2. What is the new information and perspectives to better understand uncertain situations that may occur in your new station?
3. What is your mechanism for how you seek out diverse perspectives and input to better understand complex situations?

METHODOLOGY

The study uses qualitative research, particularly phenomenological research design. Which is a research approach that allows the researcher to interpret the lives of people to understand their problems better and deeper to generate solutions that are relevant to their situations, Wa-Ambaleka (2018).

The participants of the study were eleven (11) school heads in Tantanagan District I. The inclusion criteria will be a current or incumbent school head in schools that was reshuffled regardless of their plantilla position this school year 2023-2024.

RESULTS

On the unexpected and sudden changes in their new station as school heads. The following themes were generated by the unexpected and sudden changes in their new station as school heads, **adjusting and adapting to the new environment, and prioritizing tasks and open communication.**

On the new information and perspectives to better understand uncertain situations that may occur in their new station. The themes were generated in terms of new information and perspective to better understand uncertain situations that occur in their new station such as; **salient information from stakeholders** and **the right direction in making decisions.**

On their mechanism in seeking out diverse perspectives and input to better understand complex situations. The theme that was generated on the mechanism of seeking diverse out diverse perspectives and input to better understand complex situations is **Teamwork and cooperation.**

On how they manage their emotions and reactions in ambiguous situations. In terms of the ambiguous situation, the school head participants shared their views and thoughts on the **Value of Understanding Code of Professional Ethics.**

DISCUSSION

On the unexpected and sudden changes in their new station as school head

In education systems like the state government level and public education at the local level, concerning districts and schools that employ teachers, recruitment and retention policies have a direct impact on their ability to fill the desired number of teaching fields.

The following themes were generated by the unexpected and sudden changes in their new station as school heads, **adjusting and adapting to the new environment, and prioritizing tasks and open communication.**

The first theme generated was to **adjust and adapt to the new environment.** Where school head participants shared their thoughts as:

> *"As a neophyte School Head, it required me lot of adjustment, especially to the new work environment, specifically the teachers, learners, and parents. But as mandated with the function, I willingly accepted the challenge. The first week will be more in roaming around school and a thought observation. I prepared also a feedback mechanism to cater to expectations and ways forward",* ***Participant 1, Male, Mr. J, Principal 1;***
>
> *"Common changes that usually occur in our station are changes in weather conditions, additional workloads, new designations, promotions, student misbehavior, reshuffling of school heads, misbehavior, and many more. Whenever I face unexpected changes in my working environment, I first take a moment to understand the situation and look into the positive and negative impact of the sudden change. Then, I prioritize my tasks and communicate with relevant individuals to ensure a smooth transition and come up with a good decision and solution".* ***Participant 7, Female, Mrs. M, Head Teacher II***

The result of the study is related to the statement of Gawęda 2018 states that the school head should be a partner for the employees and for the students a support and an individual who is involved in recognizing their needs and eliminating all didactic and educational problems. Singular school heads are motivated to work and learn, promote appropriate behaviors on the school's website, and involve parents in school life, determining the principles and rules of cooperation.

The second theme that was generated was **prioritizing tasks and open communication.**

School heads, as key leaders in the country's education system, are indispensable in the realization of the government's aim to provide schoolchildren with quality basic education.

In regards to the generated theme of prioritizing tasks and open communication. The school head participants share their ideas state that;

> *As a neophyte School Head, it required me lot of adjustment, especially to the new work environment, specifically the teachers, learners, and parents. But as mandated with the function, I willingly accepted the challenge. The first week will be more in roaming around school and a thought observation. I prepared also a feedback mechanism to cater to expectations and ways forward.* ***Participant 1, Male, Mr. J, Principal 1;***
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> *"Common changes that usually occur in our station are changes in weather conditions, additional workloads, new designations, promotions, student misbehavior, reshuffling of school heads, misbehavior, and many more. Whenever I face unexpected changes in my working environment, I first take a moment to understand the situation and look into the positive and negative impact of the sudden change. Then, I prioritize my tasks and communicate with relevant individuals to ensure a smooth transition and come up with a good decision and solution".* ***Participant 7, Female, Mrs. M, Head Teacher II;***
>
> *"Handling sudden changes in the workplace or school may sometimes be challenging but I think my optimism and adaptability made me cope with it. As to how well I handle sudden change, I can say that I am still a novice since it is just my third year as a school head. As to how I handle it, I make sure that I have gathered the necessary information and understand the reasons for change before making any decisions or taking any action".* ***Participant 8, Female, Mrs. S, Head Teacher II;***
>
> *"For me, I can address unexpected changes by communicating effectively with my colleagues or the teachers and even with my superiors. Moreover, embracing the changes as an opportunity for growth is the best approach for it may develop new skills and learn new ways of working".* ***Participant 8, Female Mrs. S, Head Teacher II***

The result of the study is related to the statement of Barola, R., C, & Digo, G., S. (2022). School heads may influence or improve and increase their levels of knowledge, practice, and professional engagement which leads to an enabling and supportive environment for effective teaching and learning to happen even amid a global educational crisis.

In addition, School heads, as key leaders in the country's education system, are indispensable in the realization of the government's aim to provide schoolchildren with quality basic education. Republic Act No. 9155, or the Governance of Basic Education Act of 2001, states that a school head is a person responsible for administrative and instructional supervision of a school or cluster of schools.

On the new information and perspectives to better understand uncertain situations that may occur in their new station

Modern organizations are going through continuous changes and have to deal with high uncertainty due to the still-growing worldwide competition and a quickly changing economic climate.

The themes were generated in terms of new information and perspective to better understand uncertain situations that occur in their new station such as; **salient information from stakeholders** and **the right direction in making decisions.**

As the school heads participants share their thoughts about this matter;

> *"In every station you are assigned, you encounter differences and adjustments in the school culture. I asking for salient information from the community, the teachers, and the learners about what they are expecting from me, and how are we (The school head, Teachers, learners, community, and stakeholders) best improve the school for the learners and learning strategies as well as physical outlook of the school. Dahil una sa lahat ay bata. "Bansang makabata, Batang makabansa".* ***Participant 3, Male Mr. A, Teacher In-Charge, Teacher III***
>
> *"When I was transferred to the new station, I always seek information or ask the previous school head about the operation of the school, the people in the school and about the relationship between and among the school community. Moreover looking beyond, the immediate circumstances and considering how the situations fits into the larger context can help us gain a deeper understanding of uncertain situation at hand".* ***Participant 8, Female Mrs. S, Head Teacher II***
>
> *"When I was transferred in my new station, I always seek information, communicating with the teacher and PTA official and stakeholders. Collaborating with them, making informed decisions. By following these steps I can effectively manage uncertain situations in my new station".* ***Participant 9, Male J, Head Teacher I***
>
> *"No one is perfect, I have my weaknesses and limitations. With this, most of the time, I need to seek out new information and perspectives to better understand uncertain situations. By doing so, I am always guided in the right direction in making decisions".* ***Participant 4, Male Mr. N, Principal II***

The result of the study conforms with the study of Boesso, G. and Kumar, K. (2019) that the power and legitimacy that managers associate with a stakeholder group cumulatively are the most important determinant of how managers go about prioritizing competing claims. The

results also provide some evidence to the effect that the greater the priority accorded to a stakeholder group, the greater the efforts aimed at engaging the stakeholder groups (as evidenced by the voluntary disclosures made in the annual report).

The second theme generated was **the right direction in making decisions.**

Decision-making is the most crucial aspect of educational management. Research suggests that decision-making is one of the salient factors upon which the survival of any organization is based.

The school head participants share their thoughts about the direction in making decisions as;

> *"No one is perfect, I have my weaknesses and limitations. With this, most of the time, I need to seek out new information and perspectives to better understand uncertain situations. By doing so, I am always guided in the right direction in making decisions".* ***Participant 4, Male Mr. N, Principal II;***
>
> *"Aside from our regular SLAC meeting I openly discuss and seek suggestions and connect with the program coordinators as the situation comes along".* ***Participant 5, Female Mr. K, Principal I;***

The result of the study is parallel with the study of Gawęda, L. (2018) in which principals who rated their job satisfaction and efficacy as high gave their superintendent a high rating on their decision-making potential. Decision-making is considered an indispensable component of the management process and the headmaster's‟ life is filled with making decisions after decisions. They see decision-making as their central job. Since decision-making involves one's competence, his personality makes up, besides administrative orientation. For that, the head of the institution should possess a balanced type of personality which helps him to accommodate all queries when a particular situation allows them to arise.

On their mechanism in seeking out diverse perspectives and input to better understand complex situations

Problem-solving in complex situations or systems requires an appropriate and reliable understanding of the problem.

The theme that was generated on the mechanism of seeking diverse out diverse perspectives and input to better understand complex situations is **Teamwork and cooperation.**

The school head participants shared their views as;

> *"I think one way is to have a prioritization strategy which includes creating a task and scheduling the task. By doing so, there is a smooth operation of all the activities in school. Moreover, as much as possible, I*

should always communicate with my colleagues to increase productivity and get things done as expected. Lastly, to gather diverse viewpoints and inputs, I need to consider many things in making decisions. When making decisions, I don't only consider a single tree rather, I need to consider the whole forest". ***Participant 4, Male Mr. N, Principal II;***

"As a school head, we always consider a variety of viewpoints. We involve our people/ teachers in the decision-making process that will allow for a broader image of perspectives and ideas which in turn can lead to better informed and more balanced final choices". ***Participant 5, Female K, Principal I;***

"As a leader, you cannot solve or give solutions alone for whatever problems may arise. You need to talk with the people involved. As for how to prioritize each area, you need the pros"s and cons"s and the benefits of each decision to be made". ***Participant 6, Female Mrs. E, Head Teacher II;***

"To ensure that I will be able to gather diverse viewpoints, I make sure that everyone understands the reasons and purpose of the situation. I communicated to them the pros and cons of the situation and allowed them to collaborate in the decision-making process. This is to ensure that everyone feels included and valued in the process and that their contributions are accepted". ***Participant 7, Female M, Head Teacher II'***

"I think in terms of prioritizing methods, It should be based on urgency and weight. Of course, in making such a decision we need to have a collective idea and weigh everything as to how much such an idea helps us in coping with the challenges and making solutions to the problem". ***Participant 8, Female Mrs. S, Head Teacher II, and***

"As a school head, I will be able to involve various methods such as open forums, and diverse representation in decision-making bodies and to make sure everybody can understand the complex situations and community engagement. By prioritizing these, we can ensure we gather diverse viewpoints and input, fostering inclusivity and a deeper understanding of complex situations". ***Participant 9, Male Mr. J, Head Teacher I***

The result of the study is anchored on the statement, that Manzoor et. al (2011), state that the team can be defined as a group of individuals who work collectively to achieve the same purposes and goals to provide an excellent quality of services. Teamwork can enable the members of the team to have a higher level of emotional security, self-confidence, and the ability to plan and decide with others positively. Also, it helps in creating a healthy work environment with workable agendas, creative activities, positive strategies, and values. On the other hand, the absence of teamwork concepts and strategies can lead to occupational failure, disappointment, low morale, and poor

productivity which threatens the entity of the organization. The employees who work in an organization that does not have a strong concept of teamwork, usually fail to deliver the expected results and to achieve the goals and visions of that organization. The presence of the teamwork concept is a necessary rule to help the employees work together towards common aims and goals creatively.

Conclusions

The following conclusions are drawn based on the findings of the study.

Adjusting and adapting to a new environment, whether it's a new job, a new team, or a new situation, is essential for success. Here's a structured approach to prioritizing tasks and fostering open communication in a new environment.

By prioritizing tasks effectively and fostering open communication, you can enhance productivity, collaboration, and overall success in any environment. These principles apply whether you're working on individual projects, leading a team, or contributing to a larger organizational effort.

As a school head, being adaptable to change is a valuable skill in today's dynamic and fast-paced world.

Making decisions effectively requires a combination of critical thinking, sound judgment, and clarity of purpose.

Lastly, Teamwork and cooperation are essential for achieving common goals and fostering a positive work environment

Recommendations

From the salient findings of this study and the conclusion reached, the following recommendations are presented. The school head may continue the rapport with the stakeholders and promote shared governance. The school head may continue open communication with the teachers, and stakeholders to promote camaraderie. The school head may continue the teamwork and cooperation to poster the school of peace. That this study be replicated in wide scope to have a clearer picture quantitatively.

Compliance with Ethical Standards

This paper has a single author and confirms the ethical standards.

Acknowledgments

The acknowledgment goes to the participants for their shared time and contribution to the researchers whose work has been referenced in this paper and most especially to Leodie D. Mones, PhD for his technical assistance in completing this paper. Their valuable insights and findings have substantially contributed to the analysis of this study.

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SCHOOL HEADS CONFLICT MANAGEMENT PRACTICES AND SCHOOL ATMOSPHERE IN LAMBAYONG DISTRICT III

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ABSTRACT

A conflict usually occurs when two or more people communicate. When people think of conflict in simple terms, they think that happens when serious issues and anger are invoked in the communication process. This study examines the school heads' conflict management style practices and school atmosphere in Lambayong District III for the school year 2023-2024. It employed a descriptive-correlational design among ninety-five teachers and school heads. Mean and Pearson–moment correlation coefficient was employed to test the hypothesis. On the extent is the level of practices of the school head in conflict management in terms of, integrating, obliging, dominating, avoiding, and compromising. there were two (2) domains or indicators that were observed to the moderate level, the obliging and avoiding. In the same manner, there were also two (2) domains or indicators which observed to the great level, the dominating and compromising.On extent of the school atmosphere in terms of three (3) domains, social connectedness, positive relationship with school personnel, and intellectual engagement. It further shows that social connectedness and positive relationships with school personnel are identically observed to a great extent. On the other hand, intellectual engagement was the highest among the three, which means that intellectual engagement is observed to the greatest extent. Interestingly it was found that there is no significant relationship exists between conflict management and school atmosphere.

Keywords: *Conflict Management, Practices, School Atmosphere, School Heads, Lambayong District III*

INTRODUCTION

Conflict-handling styles have been analyzed by considering different organizational phenomena such as emotions, personality, or even religions Ayas, T., et. al (2010). This author accorded that there has been an increasing interest in a deeper examination of the impact of culture on conflict-handling styles. Conflict is a recurring decimal in all human relationships, be it in the family, institution, or organization.

More so, the school, like any other modern institution, is not without potential negative features, incompatible behaviors, and conflicts that might be counter-productive and give rise to inefficiency, ineffectiveness, or dysfunctional consequences in the achievement of goals and objectives. The school as a bureaucratic organization with the division of labor, line of authority in terms of teacher-principal, subordinate-super ordinate relationships, rules and regulations, and communication flow - upward, downward, and horizontal is bound to have conflicts.

Teachers' commitment to organization plays a key role in the formation of an integrated effort in the school organization. espoused that school organization needs to build up the necessary efforts to encourage and enable teachers to strive for their strong commitment to the organization. This will enable the school organization to meet future challenges and at the same time maintain teachers' attachment to the organization.

Due to the overstaying of school heads in particular schools, there are problems arise in their conflict management practices in addition due to the change of school heads in a short period, teachers and the school as a whole adjust to the conflict management practices of the school head.

Thus, the research will be conceptualized to find out the conflict management practices of school heads in Lambayong III District and their relation to the school environment for the school year 2023-2024.

Research Questions

This study ascertains the school heads' conflict management practices and school atmosphere in Lambayong District III.

Specifically, it sought to answer the following questions:

1. To what extent is the level of practices of the school head in conflict management in terms of;
    1.1. Integrating;
    1.2 Obliging;
    1.3 Dominating;
    1.4 Avoiding, and
    1.5 Compromising?

2. What is the extent of the school atmosphere in terms of;

2.1 Social Connectedness;
2.2 Positive Relationships with School Personnel, and
2.3 Intellectual Engagement?

3. Is there a significant relationship between the school head's conflict management practices and school atmosphere?

METHODOLOGY

The study uses a descriptive-correlational design. It determines the relationship of the independent variables such as school heads' conflict management styles along with integrating, obliging, dominating, voiding, and compromising, and the school atmosphere as dependent variables and school atmosphere in terms of, Social Connectedness, Positive Relationships with School Personnel, and Intellectual Engagement.

The respondents of the study were the ninety-five (95) school heads together with the teachers in the Municipality of Lambayong District III for the school year 2023-2024.

RESULTS

On the extent is the level of practices of the school head in conflict management in terms of, integrating, obliging, dominating, avoiding, and compromising. there were two (2) domains or indicators that were observed to the moderate level, the obliging and avoiding. In the same manner, there were also two (2) domains or indicators which observed to the great level, the dominating and compromising.

On extent of the school atmosphere in terms of three (3) domains, social connectedness, positive relationship with school personnel, and intellectual engagement. It further shows that social connectedness and positive relationships with school personnel are identically observed to a great extent. On the other hand, intellectual engagement was the highest among the three, which means that intellectual engagement is observed to the greatest extent.

Interestingly it was found that there is no significant relationship exists between conflict management and school atmosphere.

DISCUSSION

On the extent is the level of practices of the school head in conflict management in terms of, Integrating, Obliging, Dominating, Avoiding, and Compromising

Table 1. Level of practices of the school head in conflict management in terms of, Integrating, Obliging, Dominating, Avoiding, and Compromising

INDICATORS	Mean	Description	Interpretation
Integrating	3.23	Partially	Observed to the lesser level
Obliging	3.78	Moderately	Observed to a moderate level
Dominating	4.25	Always	Observed to the greatest level
Avoiding	4.00	Moderately	Observed to a moderate level
Compromising	4.31	Always	Observed to the great level
Over All Mean	**3.92**	**Moderately**	**Observed to a moderate level**

The table exhibits the summary table of school heads' conflict management styles they use in their respective schools if a conflict arises.

The overall mean of 3.92 with a verbal description of moderately which mean it was observed to the moderate level among school heads. More specifically, integrating conflict management style got the lowest mean of 3.23 with a verbal description of partially which interpreted as observed to the lesser level, while obliging conflict management style got the second lowest computed mean of 3.78 which was interpreted as observed to the moderate level among school heads.

Interestingly, compromising got the highest computed mean of 4.31 with a verbal description of Always which mean observed to the great level, followed by domination with a computed mean of 4.25 with a verbal description of Always which is interpreted as Observed to the great level.

Based on the data above therefore comprising is the common use by the school heads to settle conflict in their respective school.

The result of the study conforms to the statement and study of Rahim (2012), that a compromising style may be effectively used to handle strategic and complex issues. In a compromising style, the parties negotiate the strategically important point and let go of the insignificant point. In a few words, a compromising style may be effective in handling immediate conflict but the vital issues should not be sacrificed in the name of compromise. Nevertheless, it is widely used by the school administrators.

On the extent of the school atmosphere in terms of, Social Connectedness, Positive Relationships School Personnel, and Intellectual Engagement

Table 2. Extent of the school atmosphere in terms of, Social Connectedness, Positive Relationships School Personnel, and Intellectual Engagement

INDICATORS	Mean	Description	Interpretation
Social Connectedness	3.90	Often	Observed to a great extent
Positive Relationship with School Personnel	3.99	Often	Observed to a great extent
Intellectual Engagement	4.28	Always	Observed to the greatest extent
School Atmosphere	**4.06**	**Often**	**Observed to a great extent**

The table displays the summary table of the school atmosphere in terms of social connectedness, positive relationship with school personnel, and intellectual engagement with the overall mean of 4.06 which is interpreted as “Observed to a great extent. In particular, intellectual engagement got the highest computed mean of 4.28 with a verbal description of always which means “Observed to the greatest extent, followed by positive relationship with school personnel with a mean of 3.99 and social connectedness with a computed mean of 3.90 both with a verbal description of often which mean “observed to great extent”.

This only concludes that teachers have an evident intellectual engagement among themselves and more on the intellectual conversation for the enhancement of the teaching and learning process.

The result of the study conforms with the study of Fredricks et.al (2014) A study on the relationship between teacher engagement and student engagement suggested that teacher engagement positively influences student engagement, highlighting the significance of teachers' active involvement in fostering student engagement.

On the relationship between conflict management practices and school atmosphere

Table 3. The Relationship Between Conflict Management Practices and School Atmosphere

domains	R-Value	p-value	interpretation
Integrating	.545	.067	Not Significant
Obliging	.493	.104	Not Significant
Dominating	.451	.141	Not Significant
Avoiding	.372	.208	Not Significant
Compromising	.471	.119	Not Significant
Conflict Management (Overall)	**.121**	**.708**	**Not Significant**

Table shows the relationship between the school heads' conflict management practices and the school atmosphere. It can be observed in the table that the p-values of all the conflict management practices domains were all greater than 0.05 level of significance, which means that each of them has no significant relationship with the school atmosphere. Similarly, the overall conflict management practices of the school heads were found to have a p-value of .708 which is greater than 0.05. This implies that the null hypothesis is accepted and therefore concludes that there exists no significant relationship between the school heads' conflict management practices and the school atmosphere.

The result of the study is similar as noted by Adhiambo and Enose (2011), conflict brings stress and discomfort due to the fear of the unknown; hence, it is a depressing and frustrating state of affairs between the parties involved. Conflict affects the smooth running of the teaching and learning process, but, if carefully examined and managed it leads to peaceful coexistence between teachers and their school leaders. However, conflict is inevitable, and in principle, all conflicts cannot be resolved and managed (Ramani & Zhimin, 2010). However, researchers argue that teachers and school leaders should have sufficient knowledge about how conflict occurs, and how they can respond to or manage it to bring positive changes and minimize any negative effects (Olubunmi, 2014)

Conclusions

The following conclusions are drawn based on the findings of the study.

Conflict management of school heads in terms of obliging and avoiding that were observed to a moderate level whereas dominating and compromising were observed to a great level, and intellectual engagement was observed to the greatest extent.

Meanwhile, social connectedness and positive relationships with school personnel are identically observed to a great extent. Finally, there is no significant relationship between conflict management and school atmosphere**.**

Recommendations

From the salient findings of this study and the conclusion reached, the following recommendations are presented. The school head may continue its conflict management style which is suited to their school. The teachers may sustain their best school practices to strengthen the school atmosphere. The teachers and school heads may continue or strengthen their harmonious relationship. This study be replicated in a wide scope and may add variables which is not included in this study.

Compliance with Ethical Standards

This paper has a single author and confirms the ethical standards.

Acknowledgments

The acknowledgment goes to the participants for their shared time and contribution to the researchers whose work has been referenced in this paper and most especially to Leodie D. Mones, PhD for his technical assistance in completing this paper. Their valuable insights and findings have substantially contributed to the analysis of this study.

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SITUATIONAL FACTORS INFLUENCING LEARNERS' MOTIVATION IN DEVELOPING THE SKILLS IN READING AND SPEAKING IN ENGLISH AS A SECOND LANGUAGE OF GRADE VI PUPILS OF LANTONG BABAG ELEMENTARY SCHOOL

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ABSTRACT

This study aimed to investigate the influence of the situational factors influencing the learner's motivation in reading and speaking English as second language. It explores further to determine the level of reading and speaking skills in English of the Grade VI pupils in Lantong Babag Elementary School. It sought answers of following research questions: [1] What are the situational factors influencing learners' motivation in developing the skills in reading and speaking English as a second language of grade VI pupils of Lantong Babag Elementary School? [2] What is the level of skills in reading and speaking English as a second language of grade VI pupils of Lantong Babag Elementary School? [3] What is the level of learners' motivation in developing the skills in reading and speaking English as a second language of grade VI pupils of Lantong Babag Elementary School? [4] Is there significant influence of the situational factors on the learners' motivation in developing the skills in reading and speaking English as a second language of grade VI pupils of Lantong Babag Elementary School? And [5] Is there significant correlation of the learners' motivation and the level of skills in reading and speaking English as a second language of grade VI pupils of Lantong Baba Elementary School? This study used descriptive research design utilizing 37 teachers to give their perceptions on the factors influencing motivation of the pupils improving the reading skills. The level of speaking skills grade VI pupils of Lantong Babag Elementary School of Pangutaran

District. Mean, Standard Deviation were used to determine the perceptions of teachers on the factors influence the motivation of the learners in improving the reading skills. The study found that the teachers agree that teacher styles, class activities, English class environment and teachers' attitudes are factors influencing the motivation in developing the skills in speaking and reading English. Majority of the grade VI pupils of Lantong Babag Elementary School have achieved the instructional level which means the pupils can read with the intervention of the teacher. The grade VI pupils were intrinsically highly motivated and extrinsically moderately motivated in developing the skills in English speaking. The situational factors such as class activities and teachers' attitudes significantly influence pupils' intrinsic motivation while teaching styles and English class environment do not significantly influence the intrinsic motivation. There is a significant correlation between the extrinsic motivation and reading skills and there is insignificant correlation between the intrinsic motivation and the reading skills.

Keywords: *Situational Factors, Motivation, Skills, Second Language, English*

INTRODUCTION

The importance of learning English has tremendously increased in the recent past at least in the cities. But in the rural areas, students do not get enough encouragement to improve their English language skills, especially the English-speaking skills and proper pronunciation. Hence there was a need to analyze the factors that were involved in speaking English and proper pronunciation of English words. Students were suggested to take some measures in order to overcome their difficulty in spoken English skills and fluency of the language with proper pronunciation.

In many countries English is taught as a second language (L2) and its learning becomes a lifelong process and it demands lots of challenges on the learner side. In the Philippines English was introduced as L2 during American colonization. English was recognized as international language in the recent past because it is widely used in business, science, technology and exchanged of bilateral ties among nation.

In the Philippines, English was taught to all school children during the American regime. Normally, Filipino students were exposed to learning English in Primary and Secondary levels. The spread of English culture has two sides, one represents those who use English as second language or foreign language, because of such use English varies from broken English to almost native language, English has actually elevated it to the status of an International language.

At present, students in English language (EL) classes should develop their speaking skills as soon as possible, because nowadays communicating in English is extremely important due to its strengthening position as a language for international communication and its increased use throughout the world (Richards and Renandya 2002; Graves 2008). It is widely accepted that being able to communicate fluently in the English language is one of the keys to success in life. However, despite the fact that

speaking is one of the skills most demanded by learners (Nazara 2011), it is also one of the most complex skills to be developed in an EL classroom, and for this reason it often receives less attention than it deserves (Lewis 2011).

Indeed, classroom observations in speaking English classes have revealed several difficulties Teachers as well as students normally face in an EL environment: Classes where all students speak the same first language, reluctance to participate freely and spontaneously in oral activities, few opportunities for oral interaction due to the number of students in the class, curriculum restrictions, and lack of motivation, being the latter one of the main determining factors that influences student success in the EL classroom (Oroujlou and Vahedi 2011; Iwaniec 2014).

Motivation is critical to language learning and plays a significant role in the development of EL communicative skills. It is the primary impetus for starting to learn a language, and therefore, the driving force behind a positive attitude towards the development of oral communicative competence (Guilloteaux and Dörnyei 2008). Many authors identify just two main types of motivation, integrative or intrinsic motivation and instrumental or extrinsic motivation.

On the one hand, the idea of intrinsic motivation in an EL setting such as it is related to factors such as enjoyment, personal satisfaction or interest. For example, in the learning process the drive is intrinsic when students do something because they enjoy it and cannot give another reason for doing it except “I like it”, “It is funny”, “I am interest in” and so on (Ágreda 2006; Sakai and Kikuchi 2009; Oroujlou and Vahedi 2011).

On the other hand, extrinsic motivation relates to the idea of achieving some practical goals through learning the English language. In the process of language learning, the drive is extrinsic when students want to learn a language in order to get certain instrumental goals, such as getting a job or passing an examination (Ágreda 2006). However, there has been a considerable shift in research from the focus on integrative or instrumental motivation to situational factors. These factors, also known as learning situations, are considerably important for learners’ motivation and attitude toward English learning in contexts where the target language is spoken as a foreign language (Sakai and Kikuchi 2009; Huang 2011; Afrougha, et. al., 2014; Savaşçi 2014).

METHODOLOGY

Research Design

This study used descriptive research design. Descriptive research design is appropriate to study the present phenomenon. It was concerned with the factors affecting the speaking and reading in English Language in the English classroom.

Research Locale

The study was conducted in Pangutaran municipality. Specifically, in Lantong Babag Elementary School. Pangutaran Municipality is about 30 km away from the mainland Sulu. It can be reached out though motor boat or wooden ship at about 3 to 4 hours journey from Sulu when the sea is calm and a little longer when windy days. The following map show the position of Pangutaran Island from Sulu.

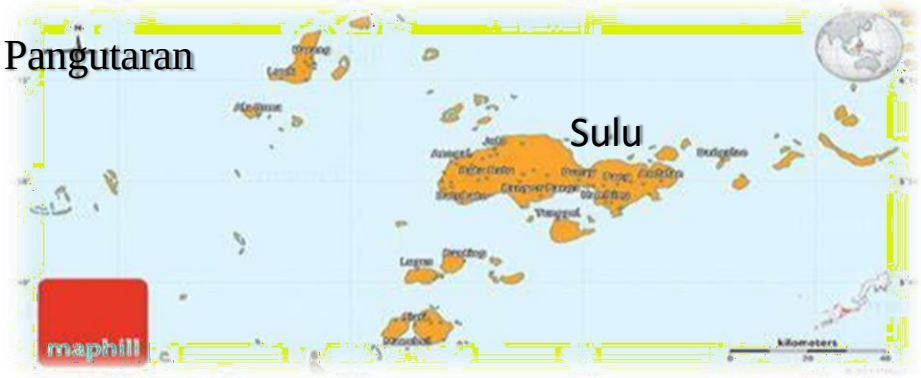


Figure 2. Map of Pangutaran and Sulu Source: https//www.bing.com/images

Research Respondents

This study utilized the teachers of Lantong Babag Elementary School. There are 38 teachers.

Research Instrument

This study used checklist questionnaire to collect data from the teachers. The questionnaire was composed of two (2) parts. First, inquiries on the situational factors affecting English skills. Second, inquiries on the motivation of teachers to develop the skills in English communication. The study used Likert scaling such as 1.0 – 1.49=Strongly Disagree; 1.5-2.49=Disagree; 2.5-3.49=Moderately Agree; 3.5-4.49=Agree; 4.5-5.0=Strongly Agree. The level of English skills will use Likert scaling such as 1.0-1.49=Very Slow Reader; 1.5-2.49=Slow Reader; 2.5-3.49=Moderate Reader; 3,5-4.49=High Reader; 4.5-5.0=Very High Reader. The level of motivation will use Likert scaling such as 1.0-1,49=Very Low Motivation; 1.5-2.49=Low Motivation; 2.5-3.49=Moderate Motivation; 3.5-4.49=High Motivation; 4.5-5.0=Very High Motivation.

Validity and Reliability

The instrument of the study was validated by three (3) experts and the reliability test was subjected to statistical decision. It was launched to 10 teachers who are not included in the study. The result was computed using split-half correlation method. The Cronbach's Alpha .720 for part 1 and .803 for part 2, both of the Cronbach's Alpha are considered highly reliable and the correlation between forms .730 also indicate highly correlated.

Reliability Statistics

Cronbach's Alpha	Part 1	Value	.720
		N of Items	15[a]
	Part 2	Value	.803
		N of Items	15[b]
	Total N of Items		30
Correlation Between Forms			.730
Spearman-Brown Coefficient	Equal Length		.758[c]
	Unequal Length		.737[c]
Guttman Split-Half Coefficient			.858

The reliability and validity statistics using test-retest method shows that the Cronbach's Alpha in the 1st trial is .790 and the Cronbach's Alpha Based on Standardized Items is .810 with Number of Items 30. The Cronbach's Alpha in the 2nd trial is .936 and Cronbach's Alpha Based on Standardized Items is .932 with Number of Items 30. (tables are shown in the appendix).

Method of Data Gathering

The research sought permission from the school administrator of Lantong Babag Elementary School to conduct the study. The research also invited the teachers of Lantong Babag Elementary School to participate in the study.

The grade VI pupils were given reading examination to determine the level of reading skills. Reading rubrics was used to evaluate the reading skills.

Method of Data Analysis

The data was computed using Statistics Package for Social Science (SPSS). The researcher utilized the assistance of the statistician to work out the computation of the data. The data for problem number 1 [What are the situational factors influencing learners' motivation in developing the skills in speaking and reading in English as a second language of grade VI pupils of Lantong Babag Elementary School?], number 2 [What is the level of skills in speaking and reading in English as a second language of grade VI pupils of Lantong Babag Elementary School?] and number 3 [What is the level of learners' motivation in developing the skills in reading and speaking English as a second language of grade VI pupils of Lantong Babag Elementary School?] will be analyzed using mean

and verbal description. The problem number 4 [Is there significant influence of the situational factors on the learners' motivation in developing the skills in reading and speaking English as a second language of grade VI pupils of Lantong Babag Elementary School?] used regression to test the hypothesis. The problem number 5 [Is there significant correlation of the learners' motivation and the level of skills in reading and speaking English as a second language of grade VI pupils of Lantong Baba Elementary School?] was analyzed using Pearson Product Moment Correlation to test the hypothesis.

RESULTS AND DISCUSSION

Situational Factors Influencing Learners' Motivation

What are the situational factors influencing learners' motivation in developing the skills in reading and speaking English as a second language of grade VI pupils of Lantong Babag Elementary School? There are assumed factors influencing the learners' motivation in developing the skills in reading and speaking English as a second language of grade VI pupils of Lantong Babag Elementary School. The factors are teaching styles, class activities, English class environment and teachers' attitudes.

Table 4.1A shows the responses of the teachers on teaching styles as the factor influencing the motivation of the learners' in developing the skills in reading and speaking English as a second language of grade VI pupils of Lantong Babag Elementary School. The teachers agree that teaching styles is one of the factors influencing the motivation of the learners' in developing the skills in reading and speaking English as a second language of grade VI pupils of Lantong Babag Elementary School. Teaching styles of teachers contribute to the development of skills in developing the skills in reading and speaking English of the grade VI pupils. English teachers may have different styles of teaching and strategies that would defend on the background of the pupils. There are pupils who have good background in English speaking and reading in their early schooling let say in the grades four and five, especially those parents who educated and concern on the study of their children. There are also pupils who have poor background in reading and English speaking, especially those who are coming from the lower section during their early schooling.

Table 4.1 A
TEACHING STYLES

Teaching Styles	Mean	SD	Description
Students are given speaking task	4.39	.916	Agree
Speaking English in class is highly encouraged	4.32	.747	Agree
I used informal reading teaching style	4.29	1.063	Agree
I call students for oral participation everyday	4.26	.644	Agree
I always try to speak and read in English in the class	3.61	.823	Agree

N = 37; Overall Mean	4.17	.838	Agree

Legend: 1.00-1.49=Strongly Disagree; 1.5-2.49=Disagree; 2.5-3.49=Moderately Agree; 3.5-4.49=Agree; 4.5-5.0=Strongly Agree

Table 4.1B shows the responses of the teachers on a factor class activity, the teachers agree that class activities is also a factor influencing the motivation of the pupils in developing the English speaking and reading skills. There are times when the teachers have high expectation and strong aspiration of the pupils to become a good English speaker, the teacher often develop class activity that can develop the skills in speaking English. Class activities like dramatization, dialogue, debate, extemporaneous speaking, reading poem aloud, and class discussion are some of the examples of class activities that can develop the skills of the pupils in English speaking. As a matter of fact, the English teachers in the student-centered curriculum made it usual to design activities that involved speaking and reading in the classroom. The pupils are highly given motivation to influence them to speak and read as part of the class recitation. The pupils, sometimes are given piece, poem, or reading materials and encourage them to read aloud so that their tongue can be twisted to follow the correct pronunciation and diction of the English words. There are some teachers who are very particular in the classroom activities to explore students in speaking English.

Table 4.1B
CLASS ACTIVITIES

Class Activities	Mean	SD	Description
Class reporting	4.57	.689	Agree
Focus group discussion	4.22	.821	Agree
Pupils are using informal conversation among themselves	3.97	1.093	Agree
Poem recital	3.59	1.189	Agree
Speech delivery	3.54	.900	Agree
N = 37; Overall Mean	3.98	.938	Agree

Legend: 1.00-1.49=Strongly Disagree; 1.5-2.49=Disagree; 2.5-3.49=Moderately Agree; 3.5-4.49=Agree; 4.5-5.0=Strongly Agree

Table 4.1C shows that the teachers agree that English class environment is a motivational factor influencing the English-speaking skills of the pupils. English class environment is a form of activity that reminds the students to speak English in the classroom and the school premises. There are teachers who are concern and enthusiastic to develop the English speaking. They sometimes organize the pupils to an English club and develop with them a policy to influence the pupils to speak English. Sometimes they made a policy to collect penalty for those pupils who speaks mother tongue, but that is part of the school activity to improve English speaking skills.

Table 4.1C
ENGLISH CLASS ENVIRONMENT

English Class Environment	Mean	SD	Description
The teacher is posting reading materials in walls	4.51	.692	Agree
Writing English letters	4.26	.724	Agree
The teacher is communicating to pupils in English Language	4.24	.786	Agree
Role playing in English language	4.03	.799	Agree
The pupils initiate informal conversation among themselves	3.95	.957	Agree
N = 37; Overall Mean	4.20	.792	Agree

Legend: 1.00-1.49=Strongly Disagree; 1.5-2.49=Disagree; 2.5-3.49=Moderately Agree; 3.5-4.49=Agree; 4.5-5.0=Strongly Agree

Table 4.1D shows that the teachers agree that the teacher's attitudes is one of the factors influencing the motivation of developing skills in speaking and reading in English. If the teacher is motivated to speak English in the classroom certainly the pupils can manage to improve the skills in speaking English. No matter how the level of difficulty to understand English language, the pupils can manage to cope with the teacher somehow when the teacher constantly use English as a second language in the classroom the pupils tend to cope with the class activities. Moreover, when the teacher used the mother tongue explain the concept of the lesson the pupils encounter difficulty in understanding English, but when the teacher is consistently used the English language in all the explanation of the concept the pupils little by little adopt the method of teaching. Attitudes of the teachers really a factor to motivate the pupils improve the speaking English skills.

Table 4.1D
TEACHER'S ATTITUDES

Teacher's Attitudes	Mean	SD	Description
I used constantly English language in communicating to my pupils	4.30	.740	Agree
I used English language when writing letters and other communication in information dissemination	4.18	.801	Agree
I used English Language when communicating with other teachers	4.16	.789	Agree
I instruct my pupils to speak in English in their ordinary conversation	4.15	.619	Agree

I used English Language in giving instruction to my pupils	4.03	.822	Agree
N = 37; Overall Mean	4.16	.754	Agree

Legend: 1.00-1.49=Strongly Disagree; 1.5-2.49=Disagree; 2.5-3.49=Moderately Agree; 3.5-4.49=Agree; 4.5-5.0=Strongly Agree

Summary: Factors Influencing the Motivation in improving English Speaking Skills

Table 4.1E shows the mean and standard deviation of the responses of the teachers on the factors influencing motivation in developing English speaking and reading skills of the grade VI pupils in Lantong Babag Elementary School in Pangutaran District. The teachers agree that teacher styles, class activities, English class environment and teachers' attitudes are factors influencing the motivation in developing the skills in speaking and reading English. These factors can initiate positive influence as well as negative influence. Positive influence would be possible if the teachers dedicatedly improve teaching styles, class activities, English class environment and teachers' attitudes. Otherwise, initiate negative influence if the teachers do not find ways to improve teaching styles, class activities, English class environment and teachers' attitudes.

The result of this study is somewhat providing relevant support to the literature states that learning English is a complicated phenomenon especially for those who never experience learning English as a foreign language (FL). It is multifactorial and depends upon many motivational factors. The factors include; cultural beliefs and expectations, educational policies, local influences, task requirements, personal preferences, learning opportunities, individual age, gender, educational level, and social class (Oxford, 1989; Oxford, 1990; Chamot & Kupper, 1989). However, motivation is crucial, pivotal, and top of all factors.

This result is also supportive to the literature that states that foreign language learning seems difficult until there are some motivational factors, which motivate the learner to learn any foreign language (FL) including English. Adult learning is predicated on some experiential learning cycle (Arkoful and Abiadoo, 2015) that is relevant to four learning principles such as it should be concrete experience, reflective observation of new experience, abstract conceptualization, and active experimentation.

Table 4.1E
SUMMARY OF THE FACTORS INFLUENCING MOTIVATION

Factors	Mean	SD	Description
Teaching Styles	4.17	.838	Agree
Class Activities	3.98	.938	Agree
English Class Environment	4.20	.792	Agree
Teacher's Attitudes	4.16	.754	Agree

Legend: 1.00-1.49=Strongly Disagree; 1.5-2.49=Disagree; 2.5-3.49=Moderately Agree; 3.5-4.49=Agree; 4.5-5.0=Strongly Agree

Level of Skills in Speaking and Reading in English as a Second Language

What is the level of skills in speaking and reading in English as a second language of grade VI pupils of Lantong Babag Elementary School? The data were gathered using Philippine Informal Reading Inventory (PHIL-IRI). It was gathered in the opening of the school year. The students were evaluated in terms of rubrics that shows the proficiency level of reading ability such as frustration. Instructional and independent. The summary of the results is given in table 4.2A. The table shows that majority of the pupils obtained instructional reading ability level followed by the independent level and then the frustration level. The least number of pupils was in the frustration level this indicates that the pupils are slow reader. Independent reading ability level indicates that the pupils can read alone without the intervention from the teachers. In the instructional level means the pupils can read with the intervention of the teacher.

In this study, majority of the grade VI pupils of Lantong Babag Elementary School are in the instructional level which means the pupils can read with the intervention of the teacher.

Table 4.2A
LEVELS OF READING SKILLS OF GRADE VI PUPILS

	Levels	Frequency	Percent
	Frustration	5	13.9
Reading Skill	Instructional	17	47.2
	Independent	14	38.9
Total		36	100.0

Table 4.2B shows that the grade VI pupils of Lantong Babag Elementary School achieved the reading ability level of frustration. The data indicates that the grade VI pupils is good reader but needs intervention from the teacher.

This result support the findings of Cabardo (2015) who wrote that the Philippine-Informal Reading Inventory (Phil-IRI) materials were used in assessing the level of reading proficiency of Years 1 to 3 students. The data were statistically analyzed using frequency, mean, standard deviation, t-test for paired sample and analysis of variance. All hypothetical questions will be analyzed and interpreted at 5% level of significance. The results revealed that majority of the students belonged to frustration level of reading proficiency in silent reading while in instructional level for the oral reading in which majority of the males are less proficient in reading compared to females in both silent and oral reading.

Table 4.2B
READING SKILL OF GRADE VI PUPILS OF LANTONG BABAG ELEMENTARY SCHOOL

Description	Mean	Std. Deviation
Reading Skill Level Instructional N = 36	2.25	.692

Legend: 1.0 – 1.49 = Frustration; 1.5-2.49 = Instructional; 2.5 – 3.0 = Independent

Level of Pupils' Motivation in Improving the Skills in Speaking and Reading in English

What is the level of teachers' motivation in developing the skills in speaking and reading in English as a second language of grade VI pupils of Lantong Babag Elementary School? The responses of the teachers' motivation in developing the skills in speaking and reading in English. The motivation is divided into intrinsic and extrinsic motivation.

Table 4.2A shows that the teachers were intrinsically highly motivated in developing the skills in speaking and reading in English of the grade VI pupils in Lantong Babag Elementary School. Teachers' motivation in developing the skills in speaking and reading in English is very essential to overcome the negative factors. In this study the teachers are highly intrinsically motivated to develop the skills of the grade VI pupils of Lantong Babag Elementary School.

Table 4.2A
LEARNER'S INTRINSIC MOTIVATION IN DEVELOPING THE SKILLS IN SPEAKING ENGLISH

Intrinsic Motivation	Mean	SD	Description
I like to learn English	3.87	.763	Highly Motivated
I study English to answer my module in English	3.81	.569	Highly Motivated
I study English to learn to speak English	3.78	.637	Highly Motivated
I study English to communicate in English	3.63	.675	Highly Motivated
I study English to write in English	3.42	.683	Highly Motivated
N = 38; Overall Mean	3.70	.665	Highly Motivated

Legend: 1.0-1.49=Not Motivated; 1.5-2.49=Less Motivated; 2.5-3.49=Moderately Motivated; 3.5-4.49=Highly Motivated; 4.5-5.0=Very Highly Motivated

Table 4.2B shows that the teachers are extrinsically moderately motivated in developing the skills of the grade VI pupils in Lantong Babag Elementary School. So far in the province of Sulu, English language is a second language but considered as the prominent medium of instruction starting from grade IV to the higher level of education. The teachers also used the mother tongue language to explain the subject matters. In the grade VI level of education, the pupils now starting to focus on the English speaking however in the remote areas like the Pangutaran district one cannot expect much as the performance of the pupils in big cities.

The teachers are highly motivated because English is required in the curriculum and English is usually use in class discussion, especially in the science and English subjects. The interest of the teachers in developing English speaking is very essential to promote the quality of education. The pupils should be motivated to the extent of improving their performance in the class. Alternatively, the motivation of teachers in developing the skills of speaking English among the pupils initiate better academic performance in the future of their schooling. Hence, teachers should be motivated to develop the skills of the pupils.

Table 4.2B
LEARNERS' EXTRINSIC MOTIVATION IN DEVELOPING THE SKILLS IN SPEAKING ENGLISH

Extrinsic Motivation	Mean	SD	Description
English is required in curriculum	3.97	.440	Highly Motivated
English is use in class discussion	3.94	1.027	Highly Motivated
The teacher always speaks English in class	3.27	.732	Moderately Motivated
Most communication are delivered in English during occasions	3.18	.609	Moderately Motivated
English speaking is needed when working in abroad	3.00	1.208	Moderately Motivated
Valid N = 38; Overall Mean	3.47	.803	Moderately Motivated

Legend: 1.0-1.49=Not Motivated; 1.5-2.49=Less Motivated; 2.5-3.49=Moderately Motivated; 3.5-4.49=Highly Motivated; 4.5-5.0=Very Highly Motivated

Significant Influence of Situational Factors on the Pupil's Motivation

Is there significant influence of the situational factors on the Teachers' motivation in developing the skills in speaking and reading in English as a second language of grade VI pupils of Lantong Babag Elementary School?

Table 4.3A shows that the situational factors such as class activities and teachers' attitudes significantly influence teachers' intrinsic motivation while teaching styles and English class environment do not influence the intrinsic motivation. The class activities

usually involved with student centered teaching environment. The teacher is only a facilitator of learning. The students are the one who are doing the activities. Hence teachers are motivated in developing the skills in English speaking. Likewise, the teachers' attitudes also a factor that influence the intrinsic motivation.

The F values indicate significant influence of the factors at .05 significant level of confidence. The hypothesis is rejected. There is significant influence of the factors on the teachers' motivation in developing the skills in speaking English as a second language of grade VI pupils of Lantong Babag Elementary School. The Regression and Regression Square values indicates that 42.1% of the data are accounted by the model. The remaining 57.9% is due to other variables not included in the study.

Table 4.3A
INFLUENCE OF SITUATIONAL FACTORS ON TEACHERS' INTRINSIC MOTIVATION

Model		Unstandardized Coefficients		Standardized and Coefficients		
		B	Std. Error	Beta	t	Sig.
1	Intrinsic Motivation	6.176	1.566		3.943	.001
	Teaching Styles	-.178	.202	-.153	-.879	.388
	Class Activities	-.453	.207	-.366	-2.193	.038
	English Class Environment	-.002	.193	-.002	-.012	.991
	Teachers' Attitudes	.286	.131	.426	2.179	.039
	F = 3.487; Sig. .016	R = .649	R^2 = .421			

Table 4.3A shows that the situational factors such as class activities, teachers' attitudes, teaching styles and English class environment do not significantly influence teachers' intrinsic motivation.

The F values indicates no significant influence of the factors at .05 significant level of confidence. The hypothesis is accepted. There is no significant influence of the factors on the teachers' intrinsic motivation in developing the skills in speaking English as a second language of grade VI pupils of Lantong Babag Elementary School. The Regression and Regression Square values indicates that 15.5% of the data are accounted by the model. The remaining 84.5% is due to other variables not included in the study.

Table 4,3B
INFLUENCE OF SITUATIONAL FACTORS ON TEACHERS' EXTRINSIC MOTIVATION

Model		Unstandardized Coefficients		Standardized and Coefficients	t	Sig.
		B	Std. Error	Beta		
1	Extrinsic Motivation	2.503	1.855		1.349	.188
	Teaching Styles	.196	.354	.109	.554	.584
	Class Activities	.041	.289	.044	.141	.889
	English Class Environment	.441	.535	.328	.825	.416
	Teachers' Attitudes	.160	.123	.235	1.304	.203
	F = .991; Sig. = .442	R = .394	R^2 = .155			

Relationship of Pupils' Motivation and Skills in Speaking and reading in English

Is there significant correlation of the Teachers' motivation and the level of skills in speaking and reading in English as a second language of grade VI pupils of Lantong Baba Elementary School?

Table 4.4 shows that there is moderately high significant correlation between the external motivation and reading skills level of grade VI pupils of Lantong Babag Elementary School. There is low insignificant between the intrinsic motivation and the reading skills level of grade VI pupils. The extrinsic motivation involved praises of student achievement and giving rewards for the excellent reading ability. It appears in this study that the students given high motivational level would affect the reading skills. The students improve the reading ability with the intervention of the teachers for those who are instructional achievers. Intrinsic motivation promoted by individual interest and enthusiasm to read. In this study intrinsic motivation have insignificant low correlation with the reading skills.

The hypothesis is rejected in terms of correlation between the extrinsic motivation and accepted between the intrinsic motivation and the reading skills of the grade VI pupils of Lantong Babag Elementary School.

When the motivation is high the reading skills tend to be high. That is to say that external motivation can improve the reading ability of the pupils.

Table 4.4
RELATIONSHIP OF MOTIVATION AND READING SKILL LEVEL

		Reading Skill Level
Extrinsic Motivation	Pearson Correlation	.579**
	Sig. (2-tailed)	.000
	N	36
Intrinsic Motivation	Pearson Correlation	.200
	Sig. (2-tailed)	.265
	N	33

Conclusions

The teachers agree that teacher styles, class activities, English class environment and teachers' attitudes are factors influencing the motivation in developing the grade VI pupils of Lantong Babag Elementary School skills in speaking and reading in English. As a result, the pupils have achieved instructional level which means they can read with the intervention of the teachers. The intrinsic motivation highly influences the teachers while extrinsic motivation moderately influences the teachers in improving the pupil's skills in speaking and reading in English. The situational factors such as class activities and teachers' attitudes significantly influence teachers' intrinsic motivation while teaching styles and English class environment do not significantly influence the intrinsic motivation. There is significant correlation between the extrinsic motivation and reading skills and there is insignificant correlation between the intrinsic motivation and the reading skills of the grade VI pupils in Lantong Babag Elementary School.

Recommendations

The following recommendations were forwarded:

Research Agenda

1. The teachers should be sent to seminar workshop to improve the motivation in improving the reading skills of the grade VI pupils.
2. The school administrator should include in their School Improvement Plan the strategies to motivate teachers improving the reading skills of the pupils.
3. The Parents should actively participate in the learning process to assist the motivation of teachers in improving the reading skills of the pupils.
4. The Local Government Units and other NGOs should support to improve situational factors to enhance high motivation in improving the reading skills of the pupils.
5. Develop the programs to improve the motivation of teachers in improving the reading skills of the pupils.

B. Research Policies

1. The Ministry of Education should improve the strategies of motivating teachers in improving reading skills.
2. The Ministry of Education should monitor and assist teachers to develop the motivation in improving the reading skills of the pupils.
3. The Local officials should coordinate with the DepEd officials to develop the motivation of teachers in improving reading skills of the pupils.
4. The DepEd and LGUs should initiate programs to motivate teachers improve the reading skills.
5. The teachers should enhance knowledge and skills to motivate pupils improving their reading skills.

C. Research Problem

1. Reading Performance of Grade VI Pupils in the Rural and Urban setting
2. Experimental Study on the Use of Extrinsic Motivation to Improve the Reading skills of Grade VI Pupils
3. Strategies to Develop Strategies Improving the Situational Factors to Enhance Reading Skills of the Pupils
4. Collaborative Efforts of Teachers and School Administrator to Improve Motivation to Enhance Better English Skills
5. Teaching Reading Demonstration and Academic Performance Using Modular and Blended Learning Approach

Compliance with Ethical Standards

The researcher asked the panels of expert to validate the questionnaires first. Then, the researcher asked the permission from the office of the Dean of the Graduate School, Mindanao State University-Sulu and the District Supervisor of Pangutaran, Sulu to launch the checklist questionnaires. As soon as the permission was granted, the researcher coordinated the Principal and launched the questionnaires to the teachers as respondents. In like manner, the written consent form for both the school heads and teachers include the statement of confidentiality of data and privacy of the participants. In data gathering, the respondents were given a time to answer the questionnaires and the researcher retrieved the said questionnaires after duly accomplished by the students as respondents. As soon as the questionnaires were collected, the researcher tallied the responses on the SPSS program and further was computed to answer the research questions. I hereby certify that this research work is my own work and to the best of my knowledge, it contains no materials previously published by another person. I also certify that this work does not contain materials which, to a considerable extent, has been accepted in return for an academic degree. I further declare that the content of this research is the product of my own work. Any involvement made in this work by others or elsewhere is clearly acknowledge in the manuscript.

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STUDENTS' MATHEMATICS PERFORMANCE AND PROBLEM-SOLVING SKILLS IN CONTEXTUALIZED CULTURE-BASED INSTRUCTION (Province of Guimaras Culture)

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ABSTRACT

This study determined the students' Mathematics performance and problem-solving skills in contextualized culture-based instruction. It also sought to find out if there was a significant difference in the students' Mathematics performance and problem-solving skills before and after exposure to contextualized culture-based instruction, and if there was a significant relationship between students' Mathematics performance and problem-solving skills in contextualized culture-based instruction. The researcher purposely chose the Grade 9 students at Supang National High School of the school year 2019-2020 as respondents. The Mathematics Performance Test comprised a 30-item multiple-choice type of test with a reliability coefficient of KR20 value of 0.729 and 0.804 of the Problem-Solving Test which comprised 5-item open-ended word problems. The study utilized the mean, standard deviation, and paired-sample t-test set at 0.05 alpha level of significance. The study revealed that students' exposure to contextualized culture-based instruction upgraded students' Mathematics performance from "satisfactory" to "very satisfactory" and their problem-solving skills from "did not meet expectation" to "outstanding". Consequently, students performed better in Mathematics and greatly developed their problem-solving skills after they were exposed to contextualized culture-based instruction which simply meant that this teaching strategy is effective. Moreover, there was a significant relationship between students' Mathematics performance and problem-solving skills when exposed to contextualized culture-based instruction. This explains that students' Mathematics performance can be explained or predicted by their problem-solving skills. Students who performed well in Mathematics are also expected to perform well in problem-solving.

Keywords: *Mathematics Performance, Problem Solving Skills, Contextualized, Cultured-Based*

INTRODUCTION

The 1987 Philippine Constitution in Article XIV, Section 14 states that, “The State shall foster the preservation, enrichment, and dynamic evolution of a Filipino national culture based on the principle of unity in diversity in a climate of free artistic and intellectual expression”.

Furthermore, it is also stated in Article XIV, Section 5. (1), expresses that, “The State shall take into account regional and sectoral needs and conditions and shall encourage local planning in the development of educational policies and programs”.

A contextualized instruction is an effective teaching strategy where students can construct new knowledge by connecting their educational content or their daily lessons to their previous knowledge, everyday contexts and students’ own experiences, intuitive knowledge, values, culture, and traditions of the local community. Lomibao (2014) postulated that contextualized problems are effective in improving and enhancing students’ problem-solving achievement and conceptual understanding in terms of interpreting, applying, and explaining algebra concepts.

According to the National Council for Teachers of Mathematics (NCTM, 2000), the mastery of the mathematical concepts and problem-solving skills are two very important skills to acquire in modern mathematics which is different from those days. Yet, many students were reported facing difficulties in mathematics particularly in mathematics problem solving. “Mathematics problems are really difficult”, “I did not know how to do it, that is why I did not finish it”, “I don’t like Math”. These statements were quite familiarly heard from students. They seemed to be struggling especially with mathematics problem-solving. Given a 5-item open ended word problem during periodical test, only 10 out of 40 students took time to read and tried answering the problem and only 5 out of 10 who tried could get the correct answer.

In most cases, mathematics teachers introduced mathematics concepts where situations were usually taken from foreign books and used situations which were not familiar to the students. Thus, this led to difficulties of students in linking their experiences at home and community to their Mathematics lessons. This cultural disconnection poses additional obstacles for students to learn basic skills in mathematics. Perin (2011), in a study on facilitating student learning through contextualization, also found out that practitioners who use contextualization observe positive results and the available quantitative evidence indicates that it has the potential to increase students’ achievement.

Children need to learn how mathematics applies to everyday life and how mathematics relates to other curriculum areas as well. Hence, teachers need to relate daily lessons to students’ interests and experience. Instruction should incorporate real world contexts and children’s experiences and, when possible, should use children’s language, viewpoints, and culture.

If the teaching and learning process is not equally effective for all students, the difficulties in acquiring mathematical skills by the students could get worsen. Thus, Mathematics should be taught in schools using situations that represent a particular culture of the students. In this study, the researcher will introduce Mathematics lessons integrating Guimaras culture for the students to learn not only concepts of mathematics, but also, let students feel that the lessons are interesting and engaging.

Research Questions

This study aims to determine the students' mathematics performance and problem-solving skills when exposed to contextualized culture-based instruction. Specifically, it sought to answer the following problems:

1. What is the students' Mathematics performance and problem-solving skills before and after their exposure to contextualized culture-based instruction?

2. Is there a significant difference in students' Mathematics performance and problem-solving skills before and after their exposure to contextualized culture-based instruction?

3. Is there a significant relationship between students' Mathematics performance and problem skills after their exposure to contextualized culture-based instruction?

METHODOLOGY

The Respondents. The researcher opted to conduct this study in her class purposely to have a full control of the respondents and to avoid disturbance on the schedule of classes of the other teachers during the conduct of the study.

The respondents of this study were the 42 Grade 9 students who belong in one (1) section presently enrolled at Supang National High School in school year 2019-2020.

The Data Gathering Methods. The researcher secured permit to conduct this study from the office of the school principal of Supang National High School. Since the respondents were minors, the researcher needs to inform the respondents' parents by sending them the parent-consent letter.

This study will made use of the researcher-made contextualized culture-based teaching and learning lesson exemplars drafted in 4As (Activity, Analysis, Abstraction, Application) format that cover Quadratic Equation, Rational Algebraic Expressions, and Inequalities. These topics were discussed in six (6) weeks on the first quarter of the school year as indicated in the Grade 9 Mathematics learning competencies in the K to

12 Curriculum Guide. See the sample of the contextualized culture-based teaching and learning lesson exemplars on pages as follows.

Content Standard:

The learner demonstrates understanding of key concepts of quadratic equations.

Performance Standard:

The learner is able to investigate thoroughly mathematical relationship in various situations.

Lesson 1: Illustrations of Quadratic Equations

Learning Competency: M9AL-Ia-1: Illustrate quadratic equation.

Resources/References:

1) Mathematics Grade 9 Learners Module pp.11-17, and
2) The Division Curriculum Matrix for Curriculum Localization, Division of Guimaras, September 12, 2013 by Arthur J. Cotimo, Ed.D
3) Photos: https://www.boracay-activities.ph/activities/sailing.html
http://www.thenewstoday.info/2008/09/29/20080929pic.html

Learners' Materials: Pencil, Ruler, Work Sheet and Activity Notebook.

Procedure:

Activity: (Time allotted: 10 minutes)

The teacher will gather first students' ideas about "Palayag Festival" by asking the following questions:

1. Who among you have already joined the "Palayag Festival"?
2. What are your experiences or observations during the festival?



The teacher explains that the Palayag Festival is a cultural festival that maximizes the rich traditions of the oldest municipality of Guimaras, the Buenavista. It is celebrated every 3rd Sunday of January. The Palayag is defined as to sail through "Layag" using water vessel. This is the "Kinaradto" or the oldest form of sea travel between Buenavista wharf and Iloilo.

The teacher will show a picture of a sail boat or banca (de Layag) to the learner and illustrate on how to solve the area of the "Layag" in the picture given the following dimensions.

a) Base = 6 inches
b) Height = 8 inches

A = ½ bh or $A = \frac{bh}{2}$

= ½ (6 inches) (8 inches) or $A = \frac{(6 \text{ inches})(8 \text{ inches})}{2}$

= ½ (48 square inches) or $A = \frac{48 \text{ square inches}}{2}$

A = 24 square inches or A = 24 square inches

The teacher will ask the following questions:

1. How many dimensions are required in solving the area of the layag? What are those dimensions?
2. What happen to the unit of measure in solving an area?

Analysis: (Time allotted: 5 minutes)

The teacher will ask the following questions to the leaners:

1. Supposed the base of your ”Layag” is unknown and its height is three feet longer than its base and has an area of ten square feet. What equation would represent the given situation?
2. How will you simplify the equation to find the height and the base of the layag? Show your process on the board.

Abstraction: (Time allotted: 15 minutes)

The teacher will explain that the previous activity describes a Quadratic Equation in one variable. It is a mathematical sentence of degree 2. The standard form of the Quadratic Equation is $\mathbf{ax^2 + bx + c = 0}$, where a, b, and c are real numbers, $\mathbf{ax^2}$ is the quadratic term, **bx** is the linear term, and **c** is the constant term. The **a** in the quadratic term should not be equal to zero.

The teacher will ask the leaner, why **a** in the quadratic term of the Quadratic Equation should not be equal to zero?

The teacher will show examples of a quadratic equation in standard form and a quadratic equation which is not in a standard form.

Example 1:

The $3x^2 – 2x + 4 = 0$ is a quadratic equation in standard form with a = 3, b = -2, and c = 4.

Example 2:

The 3x (x - 2) = 10 is a quadratic equation. However, it is not written in standard form.

$3x (x– 2) = 10$

$3x^2 – 6x – 10 = 10 – 10$

$3x^2 – 6x – 10 = 0$ where, a = 3, b = -6, and c = -10.

Generalization: (Time allotted: 5 minutes)

The teacher will ask the following questions to generalize the lesson:

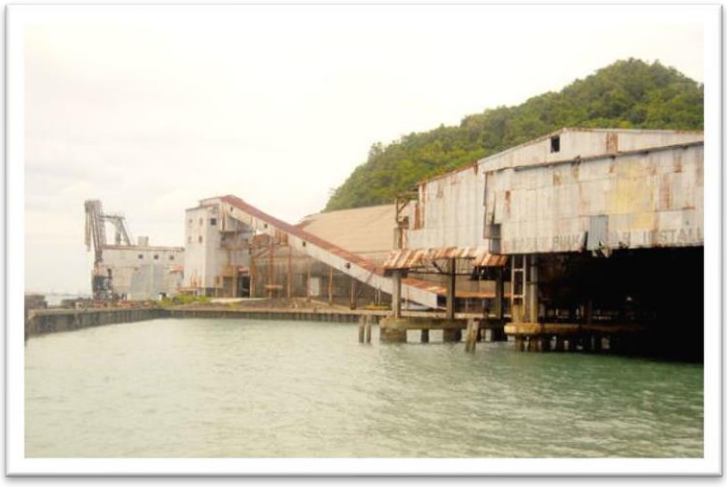
1) How will you know if a certain Guimaras culture illustrates Quadratic Equation?
2) What other Guimaras culture will this quadratic equation be observed?

Application: (Time allotted: 15 minutes)

The teacher will direct the leaners to answer the following questions based on the given situation below:

Negros had no good harbor for bigger ship way back 1970's, therefore they built the Sugar Bulk at the Jordan Wharf and used Guimaras as transship point to Iloilo.

The length of the floor area of the Sugar Bulk ware house is 10 meters longer than its width and has an area of 500 square meters.



Remnant of the flourishing sugar industry in Iloilo during the 70s, the Guimaras Bulk Sugar Installation in Jordan, Guimaras.

1) Write an equation that would represent the floor area of the Sugar Bulk warehouse, then tell whether if it is a quadratic equation or not? Explain your answer.
2) How will you transform the equation of the floor area of the Sugar Bulk warehouse to the standard form of the quadratic equation?
3) How will you determine the value of a, b, and c in the quadratic equation of the floor area Sugar Bulk warehouse?

Evaluation: (Time allotted: 10 minutes)

The teacher will direct the learners to think of at least one culture-based real-life situations and illustrate it in quadratic equation, formulate and write the equation into standard form and identify the value of a, b, and c.

Assignment:

The teacher will give the following items as an assignment to be checked next meeting.

The teacher will instruct the leaners to illustrate the given Guimaras culture into quadratic equation and determine the value of a, b and c.

1. The Guimaras island is one of the famous islands in the Philippines that is known for its sweetest mango. The Guimaras mango has many products like jam, dried mangoes, and the mango pizza. Supposed the rectangular-shaped mango pizza has an area of 384 square inches and its length is 8 inches longer than its width.

2. Most of the products in the Buenavista Pasalubong Center which is located near Buenavista Wharf are mango flavored since Guimaras is known for its sweetest mango. One of the products is the mango flavored Otap. The rectangular box that contained the mango flavored Otap has an area of 10 square centimeters, and its length is three centimeters greater than its width.

3. The name of barangay Avila came from the native dialect “Abi, La” (hey grandma) or”may I see Grandma” which was later spelled Avila. The barangay celebrates the “Tabagakan Festival” every year since making of dry tabagak is one of the livelihoods of the natives. Mary and James joined the “Tabagakan Festival” before going home they bought tabagak for their pasalubong. James bought a total of 40 kilos of “tabagak” or dry fish, where James bought three kilos more than Mary.

Administration of Pre-test was done before the conduct of the study. The test instrument comprises of two parts. Part I, The Mathematics Performance Test (MPT), includes the 30-item multiple choice type of test to assess students’ mathematics performance. One point was given for every correct answer.

Part I. Students’ Mean Scores in Mathematics Performance Test were categorized based on the following levels:

Mean Scale	Descriptive Rating	Description
24.01 - 30.00	Outstanding	Students are in advanced level of performance in the expected learning competencies or correctly answered 93% to 100% of the test which marked excellence.
18.01 – 24.00	Very Satisfactory	Students are in proficient level of performance in the expected learning competencies or answered 63% to 92% of the test correctly.
12.01 - 18.00	Satisfactory	Students performed close to proficiency in the expected learning competencies or answered 43% to 62% of the test correctly.

6.01 - 12.00	Fairly Satisfactory	Students are in developing level of performance in the expected learning competencies or answered 23% to 42% of the test correctly.
0.00 – 6.00	Did not meet expectations	Students poorly performed in the expected learning competencies or answered 0% to the 23% of the test correctly.

Part II, Problem Solving Test (PST), composed of five-item open-ended mathematical word problems involving quadratic equations that sought to measure the participants' problem-solving skills. Ten points were given to every complete and correct answer in the PST.

Students' Mean Scores in Problem Solving Test categorized as to the following levels:

Mean Scale	Descriptive Rating	Description
40.01 - 50.00	Outstanding	Students are in advanced problem-solving skills in the expected learning competencies or correctly answered 85% to 100% of the test which marked excellence.
30.01 - 40.00	Very Satisfactory	Students are in proficient level of problem-solving skills in the expected learning competencies or answered 65% and below 85% of the test correctly.
20.01 - 30.00	Satisfactory	Students have a close to proficiency problem solving skills in the expected learning competencies or answered 45% to 65% of the test correctly.
10.01 - 20.00	Fairly Satisfactory	Students are in developing level of problem-solving skills in the expected learning competencies or answered 25% to 45% of the test correctly.
0.00 – 10.00	Did not meet expectations	Students have a poor problem-solving skill in the expected learning competencies or answered 0% to 25% of the test correctly.

The instrument was pilot tested to other students who are not respondents of the said study to determine its reliability. The reliability coefficient of the MPT was KR 20 value of 0.729 and of the PST was 0.804 which were above 0.75 denoting that the test had high internal consistency. The result of the examination of each group was analyzed to draw conclusion about the effect of the contextualized culture-based teaching and learning lesson exemplars on the students' mathematics performance and problem-solving skills.

The Data Analysis Plan. The contextualized culture-based teaching and learning lesson. exemplars were implemented in six weeks on the mathematics class of the respondents. Conduct of Post-test was done, and students were given an hour to finish

the MPT and another hour on the next day to answer the PST. The researcher retrieved, checked, collated, sorted, and classified the accomplished post-test. Then, the researcher encoded, analyzed, and interpreted the gathered data using the Statistical Packages for Social Sciences (SPSS).

The researcher utilized the following statistical tools, mean and standard deviation for descriptive data analysis and paired-sample *t* - test for inferential data analysis:

Mean. It determined the average score of students' mathematics performance and problem-solving skills.

Standard Deviation. It determined the homogeneity and heterogeneity in the students' mathematics performance and problem-solving skills.

Paired-sample t-test. It ascertained the significant difference in the students' mathematics performance and problem-solving skills before and after they were exposed to instruction using contextualized culture-based teaching and learning lessons.

Pearson's Product Moment Correlation Coefficient. It ascertained the significant relationships existing between students' mathematics performance and problem-solving skills after the intervention.

RESULTS and DISCUSSION

Students' Mathematics Performance and Problem-Solving Skills Before and After their Exposure to Contextualized Culture-Based Teaching and Learning Instruction.

Table 1 below shows the result on students' mathematics performance and problem-solving skills before and after their exposure to contextualized culture-based teaching and learning instruction.

The results revealed that students' mathematics performance is "satisfactory" (M=12.34, SD=2.72) before and improved to "very satisfactory" (M=23.71, SD=3.06) after their exposure to contextualized culture-based teaching and learning instruction.

In addition, the result also showed that students' "did not meet expectation" (M=1.03, SD=2.96) in the problem-solving skills before and greatly improved to "outstanding" (M=42.40, SD=8.61) after their exposure to contextualized culture-based teaching and learning instruction.

This means that students' scores in mathematics performance and problem-solving skills improved, is higher, and less scattered if students were exposed to contextualized culture-based instruction.

Students' difficulties were found in the following learning competencies based on the Grade 9 K – 12 curriculum guide before they were exposed to contextualized culture-based instructions: 1) M9AL-If-2: Solve quadratic inequalities(M=0.21,SD=0.59), 2) M9AL-Ie-1: Solves problems involving quadratic equation and rational algebraic equation (M=0.82,SD=2.37), and 3) M9AL-Ic-d-1: Solve equations transformable to quadratic equations(M=1.42,SD=4.83).

Students' most learned competencies based on the Grade 9 K – 12 curriculum guide after they were exposed to contextualized culture-based instructions: 1) M9AL-If-2: Solve quadratic inequalities (M=33.92,SD=6.89), 2) M9AL-Ic-1: Characterize the roots of a quadratic equation using the discriminant (M=28.32,SD=1.05), 3) M9AL-Ia-b-1: Solve Quadratic Equation by Factoring (M=28.32,SD=1.25).

It can be observed that the least learned competency before and the most learned competency after students were exposed to contextualize culture-based instruction was the same. This simply implies that the intervention was very effective and greatly improved the said learning competency.

According to the National Council for Teachers of Mathematics (NCTM, 2000), the mastery of the mathematical concepts and problem-solving skills are two very important skills to acquire in modern mathematics which is different from those days.

Table 1

Least Learned Com petencies in Quadratic Equation

CODE	Learning Competencies	BEFORE		Discriptive Rating	AFTER		Discriptive Rating
		Mean	SD		Mean	SD	
Mathematics Performance		**12.32**	**2.72**	**Satisfactory**	**23.71**	**3.06**	**Very Satisfactory**
M9AL-Ia-1	Illustrate quadratic equation.	21.03	1.32		27.86	1.23	
M9AL-Ia-b-1	Solve quadratic equation by extracting square roots.	16.32	2.06		27.63	1.24	
M9AL-Ia-b-1	Solve Quadratic Equation by Factoring	15.32	1.62		28.32	1.25	
M9AL-Ia-b-1	Solve Quadratic Equation by Completing the Square	5.23	4.52		26.31	4.52	
M9AL-Ia-b-1	Solve Quadratic Equation by Quadratic Formula	7.45	3.53		26.85	3.05	
M9AL-Ic-1	Characterize the roots of a quadratic equation using the discriminant.	23.21	1.26		28.32	1.05	
M9AL-Ic-2	Describe the relationship between the coefficients and the roots of a quadratic equation.	18.29	1.23		24.36	1.56	
M9AL-Ic-d-1	Solve equations transformable to quadratic equations. (Solving Quadratic Equations that are Not Written in Standard Form).	2.63	4.15		14.23	6.25	
M9AL-Ic-d-1	Solve equations transformable to quadratic equations.(Solving Rational Algebraic Equations Transformable to Quadratic Equations)	1.42	4.83		9.52	7.35	
Problem Solving Skills		**1.03**	**2.96**	**Did not Meet Expectation**	**42.4**	**8.61**	**Outstanding**
M9AL-Ie-1	Solve problems involving quadratic equations.	0.82	2.37		33.92	6.89	
M9AL-If-2	Solve quadratic inequalities	0.21	0.59		8.48	1.72	
LEGEND:	**Mathematics Performance**, 0 – 6 (Did not meet expectations), 6.01 – 12:00 (Fairly Satisfactory),12.01 – 18.00 (Satisfactory), 18.01- 24.00 (Very Satisfactory), 24.01-30.00 (Outstanding). **Problem Solving Skills**, 0 – 10 (Did not meet expectations), 10.01 – 20.00 (Fairly Satisfactory),20.01 – 30.00 (Satisfactory), 30.01- 40.00 (Very Satisfactory), 40.01- 50.00 (Outstanding).						

Difference in the Students' Mathematics Performance before and after their Exposure to Contextualized Culture-Based Instruction

Table 3a shows the difference in the students' mathematics performance before and after their exposure to contextualized culture-based instruction.

The result revealed that there is a significant difference in the students' mathematics performance before and after their exposure to contextualized culture-based instruction t (34) = -22.418, p = 0.000 . In favor of students' mathematics performance after their exposure to contextualized culture based.

Consequently, students performed better in Mathematics after they were exposed to contextualize culture-based instruction which simply means that this teaching strategy is effective to enhanced students' mathematics performance.

Perin (2011), in a study on facilitating student learning through contextualization, also found out that practitioners who use contextualization observe positive results and the available quantitative evidence indicates that it has the potential to increase students' achievement.

Table 3a

Difference in the Students' Mathematics Performance before and after their Exposure to Contextualized Culture-Based Instruction

	t	df	Sig. (2-tailed)	Std.Error Mean	95% Confidence Interval of the Difference Lower	Upper
BEFORE AFTER	-22.418*	34	0.000	0.5072	-12.40	-10.34

*Note: *p < 0.05*

Difference in the Students' Problem-Solving Skills before and after their Exposure to Contextualized Culture-Based Instruction

Table 3b shows the difference in the students' problem-solving Skills before and after their exposure to contextualized culture- based instruction.

The result revealed that there is a significant difference in the students' problem-solving skills before and after their exposure to contextualized culture-based instruction t (34) = -29.927, p = 0.000. In favor of students' problem-solving skills after their exposure to contextualized culture based.

Hence, students greatly developed their problem-solving skills after they were exposed to contextualized culture-based instruction which simply means that this teaching strategy is also effective to upgrade students' problem-solving skills.

The result of this study was confirmed by Lomibao (2014) who postulated that contextualized problem is effective in improving and enhancing students' problem-solving achievement and conceptual understanding in terms of interpreting, applying, and explaining algebra concepts.

Table 3b

Difference in the Students' Problem-Solving Skills before and after their Exposure to Contextualized Culture-Based Instruction

	t	df	Sig. (2-tailed)	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper
BEFORE AFTER	-29.927*	34	0.000	1.3824	-44.1808	-38.5620

*Note: *p < 0.05*

Correlation between Students' Mathematics Performance and Problem-Solving Skills after their Exposure to Contextualized Culture-Based Instruction

Table 4 shows the correlation between students' mathematics performance and problem-solving skills after their exposure to contextualized culture-based instruction.

Pearson's Product Moment Correlation Coefficient result revealed that there is a significant relationship between students' mathematics performance and problem-solving skills **r* = 0.583, p =0.000. This simply means that students' mathematics performance can be explained or predicted by the problem-solving skill after they were exposed to contextualized culture-based instruction. Students who performed well in Mathematics are expected also to perform well in problem solving.

Good conceptual understanding could solve mathematics problems related to real life and could make decision critically. Further, excellent students have high levels of willingness to solve mathematical problems compared to weak or average students (Saritas, 2009).

Table 4

Correlation between Students' Mathematics Performance and Problem-Solving Skills after their Exposure to Contextualized Culture-Based Instruction

	Mathematics Performance	
	r	Sig.(2-tailed)
Problem Solving Skills	*0.583	0.000

Note: p < 0.01

Conclusions

This action research found that using contextualized culture-based instruction improved students' mathematics performance and students' problem-solving skills. The following conclusions were drawn from the findings:

1. Teachers introduced and integrated Mathematics concepts in the real-life activities of the students and therefore teachers gained students' interest and pleasure to learn Mathematics applications in their daily life exercises.

2. Students' Mathematics performance and problem-solving skills greatly improved by using contextualized culture-based instruction. This strategy was proven to be effective in making students' learning Mathematics meaningful thus, teachers are encouraged to use and master this teaching strategy in their daily class activities.

3. Used contextualized culture-based instruction was already proven to be effective in enhancing student's Mathematics performance and problem-solving skills. Consequently, the conduct of further research and continuous training for teachers in preparing contextualized culture-based teaching and learning lesson exemplars may help to convince teachers to modify their lesson plans and practice this kind of teaching strategy in their daily classes.

Recommendations

Considering the conclusions drawn and findings of this study, the following recommendations are advanced:

1. Students must be motivated to exert more effort to improve their mathematics performance and use their relevant cultures in developing their problem-solving skills. The teachers must introduce mathematics lessons by integrating relevant culture of the learners.

2. Principals and department heads of mathematics may initiate, support, and provide their teachers with ongoing professional development, led by trainers who have knowledge and expertise on contextualization. Professional development leaders should be experts within the institution rather than outsiders.

3. Policy makers may organize a core group composed of experts to make their own contextualized teaching and learning lesson exemplars in their respective field.

Compliance with Ethical Standards

The parent-consent letter was distributed to the participants and will be retrieved before the start of the implementation to make sure that parents are informed about the conduct of the study.

Result of the students' mathematics performance and problem-solving skills will be handled with confidentiality by the researcher. The gathered data were analyzed, interpreted carefully, and honest reporting was ensured by the researcher and not to deceive the public

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STUDENTS' PERFORMANCE ON THE HORIZONTAL AND VERTICAL COMPONENTS OF PROJECTILE MOTION USING PROJECT-BASED LEARNING

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ABSTRACT

There has been a pervasive goal within science education worldwide to assist students in thoroughly comprehending the fundamental characteristics of science, its theories, and the ability to apply its principles in practical contexts effectively. For learners to develop a comprehensive comprehension of science, it is imperative that they initially grasp the concepts of physics. This study aimed to assess the effectiveness of project-based learning (PBL) in enhancing students' understanding of projectile motion's horizontal and vertical components. A quasi-experimental design was employed with 100 Pagsanghan National High School Junior High School students. Initially, participants underwent a pre-test to establish baseline knowledge. Statistical analysis included mean and paired sample T-tests. Subsequently, students engaged in PBL activities where they developed projects showcasing projectile motion concepts. Post-intervention, a posttest assessed problem-solving skills and critical thinking. Results indicated significant improvement in student performance on both horizontal and vertical components of projectile motion compared to pre-test scores, suggesting the efficacy of PBL in enhancing understanding and application of physics principles.

Keywords: *Project-Based Learning, Projectile Motion, Vertical Motion, Horizontal Motion, Problem-solving, Critical Think*

INTRODUCTION

There has been a pervasive goal within science education worldwide to assist students in thoroughly comprehending the fundamental characteristics of Science (Mohan, 2018), its theories, and the ability to effectively apply its principles in practical contexts (Gasparatou, 2017). For learners to develop a comprehensive comprehension of science, it is imperative that they initially grasp the concepts of physics (Thees, 2020). Oghly (2023) states that physics provides us with knowledge about the world and the universe, elucidating how humanity has arrived at its current understanding and facilitating the pursuit of discoveries. However, notwithstanding its elegance, extensive knowledge reservoir, and myriad practical implications, the standing of physics education in the Philippines pales compared to other countries. International and local assessments indicate that the performance of the Philippines is subpar.

The Philippines was the third lowest on the PISA 2022 rankings for performance in science (Santos & Reyes, 2023). The country's measurements of 21st-century skills of learners based on the 2018 National Achievement Test (NAT) results indicate a need for improved science education. It averages a 62.72% passing rate, lower than the national passing percentage of 75.0% (DepEd Samar, 2018). According to Badeo (2019), it is essential to consider students' comprehension, enthusiasm, and perspectives on learning physics when addressing the challenges of enhancing physics education in the Philippines.

In physics education, grasping the concept of projectile motion is essential (Bufasi et al., 2021). It encompasses understanding kinematics, dynamics, and the role of gravity. This foundational understanding provides a platform for delving into more complex areas of physics and its related disciplines. Projectile motion involves simultaneous movement in horizontal and vertical directions influenced by gravity, presenting cognitive hurdles for learners due to its multi-dimensional nature (Bufasi et al., 2021). Horizontal and vertical aspects of projectile motion present unique challenges to students owing to their interaction and reliance on factors like launch angle, initial velocity, and gravitational force (Chinaka, 2021).

Although students may have a theoretical grasp of projectile motion, they face challenges when applying this knowledge to practical problem-solving situations. Research conducted by Brown et al. (2017) and Wakhata et al. (2023) has emphasized students' struggles in utilizing mathematical models and equations in real-life contexts, indicating a disparity between their conceptual understanding and its practical application. Traditionally, the teaching of projectile motion has often been confined to rote memorization of formulas and mathematical derivations, resulting in superficial comprehension and limited transferability of knowledge (Mabangula, 2023). In this educational perspective, a strong emphasis is placed on responsiveness. Research conducted by Jeong et al. (2019) has revealed that conventional teaching methods in physics are ineffective in effectively imparting knowledge to students. Instead, learning tends to be passive, with teachers serving as intermediaries for transmitting information

and students being evaluated primarily on their perceived comprehension of the subject matter.

Recognizing the shortcomings of traditional pedagogical methods, educators have increasingly turned towards innovative approaches such as project-based learning (PBL) to cultivate students' deeper understanding, critical thinking, and problem-solving skills (Karan & Brown, 2022). Moreover, some scholars view problem-based learning (PBL) as a method of teacher education that prioritizes immersive educational experiences and encourages teachers to adjust their instruction accordingly (Grossman et al., 2018).
Project-based learning (PBL) is a student-centered instructional methodology emphasizing active engagement, inquiry, and authentic application of knowledge (Alrajeh, 2021). Grounded in constructivist learning theories, PBL tasks students with tackling real-world problems or challenges, often in collaborative settings, wherein they assume the role of actively engaged participants rather than passive receivers of information (Ibitoye, 2021). Moreover, PBL encourages interdisciplinary connections, enabling students to integrate concepts from mathematics, physics, and engineering to address complex problems holistically.

This research investigated the efficacy of project-based learning in enhancing students' comprehension and performance regarding the horizontal and vertical components of projectile motion. By integrating hands-on projects into the curriculum, this study aimed to connect the divide between theoretical concepts and practical application, fostering deeper conceptual understanding and enhancing overall learning outcomes in physics education.

Research Questions

The study investigated the students' performance on the horizontal and vertical components of projectile motion using Project-Based Learning (PBL). Specifically, it conducted the following:

1. Develop a project showcasing horizontal and vertical components of projectile motion using project-based learning;

2. Determine the student-respondent's performance on the pre-test and post-test; and

3. Determine the student-respondents’ performance on problem-solving skills and critical thinking in the context of the projectile motion.

METHODOLOGY

In this study, conducted at Pagsanghan National High School in Samar, the research design employed a one-group pre-test-posttest design, utilizing a quasi-experimental approach. A total of 100 junior high school students from the 9th grade were

purposively selected from various classes, including Class Masipag, Class Masigasig, Class Maagap, and Class Matulungin, based on their enrollment status during the 2023-2024 school year and their completion of a project within the context of project-based learning focusing on projectile motion. Formal permission was obtained from the school authorities to conduct the study, including the administration of pre-tests, implementation of project-based learning activities, and post-test assessments. Data were collected using Test Questionnaires and Rubrics, both of which underwent thorough validation processes to ensure reliability and accuracy. Statistical treatments, including mean calculations and paired sample t-tests, were applied to analyze differences between pre-test and post-test scores, providing insights into the effectiveness of the project-based learning intervention. Ethical considerations were carefully addressed throughout the study, with measures taken to maintain participant anonymity, obtain informed consent, and ensure participant well-being. However, it's important to note that the scope of the study was limited to a specific school in Samar, which may impact the generalizability of the findings. Additionally, while efforts were made to ensure validity and reliability, inherent limitations in any research design should be acknowledged.

RESULTS AND DISCUSSION

This chapter covers the presentation, analysis, and interpretation of the data gathered in the study, as well as the corresponding results of the analysis made in this investigation. It discusses the project developed of the student-respondents in showcasing horizontal and vertical components of projectile motion using project-based learning, pre-test and post-test scores, and the performance of the student-respondents on problem-solving skills and critical thinking in the context of projectile motion.

The Project Developed to Showcase the Horizontal and Vertical Components of Projectile Motion using Project-based Learning

In exploring the fascinating realms of projectile motion, four sections from Pagsanghan National High School Junior High School Department embarked on a journey of creativity, culminating in the development of four unique projects *(see appendix E for the output)*. Each project, meticulously crafted and named to reflect each section's spirit, showcased the intricate interplay between horizontal and vertical components of projectile motion, as follow:

Masipag Pencil Trebuchet. This project likely focused on the design and construction of a trebuchet using pencils as the projectile. The challenge there would have been to optimize the counterweight and arm length to achieve the desired range and accuracy. Additionally, ensuring the stability of the structure during launch would have been crucial.

Integrating the provided criteria stated in the rubric were as follows:

Understanding of Projectile Motion: The Masipag Pencil Trebuchet project demonstrated a profound understanding of projectile motion principles by incorporating them into the design and construction of the trebuchet. By carefully considering factors

such as counterweight, arm length, and launch angle, the Class Masipag showcased their grasp of how these elements would affect the trajectory of the pencil projectiles.

Experimental Design: The experimental design of the Masipag Pencil Trebuchet likely involved systematic testing and adjustments to optimize its performance. Through iterative experimentation, the Class Maipag would have explored different combinations of counterweight masses and arm lengths to achieve the desired horizontal and vertical ranges for the pencil projectiles.

Creativity and Originality: Crafting a trebuchet using pencils as projectiles showcased creativity and originality in material selection and design. This innovative approach did not only add a unique twist to the traditional trebuchet concept, but also highlighted the group's ability to think outside the box when solving engineering challenges.

Presentation Quality: In presenting the Masipag Pencil Trebuchet project, the Class Masipag likely provided clear explanations of the design rationale, experimental methods, and results. Visual aids such as diagrams were used to enhance the presentation quality and effectively communicate how the project showcased the horizontal and vertical components of projectile motion.

Overall Project Quality: With a strong understanding of projectile motion principles, thoughtful experimental design, creative material choice, and clear presentation, the Masipag Pencil Trebuchet project likely achieved high overall project quality, effectively showcasing how the horizontal and vertical components of projectile motion were manifested in its design and operation.

Matulungin Popsicle Sticks Catapult. Building a catapult out of popsicle sticks would have required careful attention to detail in the construction process to ensure strength and durability. The class had experimented with different arm lengths and tension mechanisms to fine-tune the launching mechanism. Calibrating the tension to achieve consistent launches would have been a key challenge.

Integrating the provided criteria stated in the rubric were as follows:

Understanding of Projectile Motion: The Matulungin Popsicle Sticks Catapult project demonstrated a solid understanding of projectile motion principles by incorporating them into the design and operation of the catapult. The Class Matulungin's consideration of factors such as launch angle, projectile mass, and launch velocity reflected their grasp of how these variables would influence the trajectory of the popsicle stick projectiles.

Experimental Design: Experimenting with different arm lengths, tension mechanisms, and launch angles would have been essential for optimizing the catapult's performance. Through systematic testing and data collection, the group would have iteratively refined the design to achieve consistent and accurate launches, effectively showcasing the horizontal and vertical components of projectile motion.

Creativity and Originality: Constructing a catapult using popsicle sticks highlighted creativity and originality in material selection and design. The group's ability to transform everyday materials into a functional launching device underscored their innovative approach to solving engineering challenges while showcasing the horizontal and vertical aspects of projectile motion.

Presentation Quality: The presentation of the Matulungin Popsicle Sticks Catapult project likely featured clear explanations of the design process, experimental findings, and performance results. The Class Matulungin used visual aids and demonstrations to effectively convey how the project illustrates the horizontal and vertical components of projectile motion.

Overall Project Quality: With a strong understanding of projectile motion principles, thoughtful experimental design, creative material choice, and clear presentation, the Matulungin Popsicle Sticks Catapult project likely achieved high overall project quality, effectively showcasing how the horizontal and vertical components of projectile motion were manifested in its design and operation.

Maagap Barbecue Sticks Launcher. Using barbecue sticks as projectiles suggested a different approach, perhaps involving a slingshot or elastic launching mechanism. This project might have required creativity in designing a sturdy frame to withstand the tension of the launch, as well as precision in aiming to hit targets accurately.

Integrating the provided criteria stated in the rubric were as follows:

Understanding of Projectile Motion: The Maagap Barbecue Sticks Launcher project demonstrated a comprehensive understanding of projectile motion principles through its design and functionality. By utilizing barbecue sticks as projectiles, the team showcased their understanding of how different factors, such as launch angle, projectile mass, and launch velocity, influenced the trajectory of the projectiles.

Experimental Design: Experimentation with various launching mechanisms, such as elastic launchers, would have been integral to optimizing the launcher's performance. Through systematic testing and data analysis, Class Maagap would have fine-tuned the design to ensure consistent and accurate launches, effectively highlighting the horizontal and vertical components of projectile motion.

Creativity and Originality: The choice to use barbecue sticks as projectiles reflected creativity and originality in material selection and design. This unconventional approach demonstrated the group’s ability to think outside the box and adapt common materials for novel applications while also showcasing the horizontal and vertical aspects of projectile motion.

Presentation Quality: In presenting the Maagap Barbecue Sticks Launcher project, Class Maagap likely provided clear and concise explanations of the design process, experimental methodologies, and performance outcomes. The presentation may have

incorporated visual aids and demonstrations to effectively convey how the project exemplifies the horizontal and vertical components of projectile motion.

Overall Project Quality: With a strong understanding of projectile motion principles, thoughtful experimental design, creative material choice, and clear presentation, the Maagap Barbecue Sticks Launcher project likely achieved high overall project quality. It effectively showcased how the horizontal and vertical components of projectile motion were manifested in its design and operation, highlighting the class's ingenuity and technical proficiency.

Masigasig Triangular Bamboo Catapult. Bamboo offers both strength and flexibility, which would have presented unique design opportunities and challenges. The team likely focused on leveraging these properties to create a catapult capable of launching projectiles with precision. Ensuring the stability of the triangular frame and optimizing the release mechanism would have been critical aspects of this project.

Integrating the provided criteria stated in the rubric were as follows:

Understanding of Projectile Motion: The Masigasig Triangular Bamboo Catapult project did not only demonstrate a thorough grasp of projectile motion principles, but also showcased the students' adept problem-solving skills and critical thinking abilities. By creatively adapting bamboo to construct the catapult, the Class Masigasig exhibited their ability to identify unconventional solutions to engineering challenges while considering the horizontal and vertical components of projectile motion.

Experimental Design: The students' approach to experimental design reflected their problem-solving prowess and critical thinking abilities. Through systematic testing and analysis, they iteratively refined the catapult's design, demonstrating their capacity to identify and address performance limitations. This iterative process underscored their commitment to optimizing the device's functionality and understanding the intricate dynamics of projectile motion.

Creativity and Originality: The choice to utilize bamboo as the primary material for the catapult exemplified the students' creativity and originality in problem-solving. By leveraging bamboo's unique properties, they did not only engineer a functional device, but also pushed the boundaries of conventional design paradigms. This innovative approach highlighted their ability to think creatively and critically when faced with engineering challenges, ultimately enhancing the project's impact and effectiveness.

Presentation Quality: In presenting the Masigasig Triangular Bamboo Catapult project, the students likely showcased their problem-solving process and critical thinking journey. Clear explanations of design decisions, experimentation methodologies, and insights gained from iterative testing would have provided valuable context for understanding their thought process. By articulating their problem-solving strategies, the students effectively conveyed their analytical skills and intellectual rigor to the audience.

Overall Project Quality: The Masigasig Triangular Bamboo Catapult project exemplified the students' exceptional problem-solving skills and critical thinking abilities, in addition to their technical proficiency and creativity. Through a holistic approach encompassing a deep understanding of projectile motion principles, meticulous experimental design, innovative material selection, and clear presentation, the students showcased their capacity to tackle complex engineering challenges with ingenuity and insight. This project served as a testament to their intellectual curiosity, resilience, and dedication to excellence in STEM education.

In support, through engaging in the project, respondents could deepen their comprehension of the concepts related to projectile motion, including its horizontal and vertical components. Hands-on experience and active participation in project development could lead to a deeper understanding compared to passive learning methods (Yannier et. Al., 2020).

As individuals actively participated in hands-on activities and observed real-world examples, they engaged in critical thinking, problem-solving, and inquiry-based learning (DeCoito & Briona, 2023). By actively working on the project, respondents had the opportunity to apply theoretical knowledge to practical scenarios (Argawati & Suryani, 2020). This application-oriented approach could help bridge the gap between theory and real-world applications, making the concepts more relevant and meaningful.

According to Ghavifekr (2020), Projects often involve collaboration among respondents. Working together allowed them to share ideas, discuss concepts, and learn from each other's experiences. Collaborative learning fosters teamwork skills and promotes a sense of community among respondents.

Performance on the Pre-test and Post-test of the Student-respondents

Tables 1 and 2 present the results of the pre-test and post-test of student respondents who aimed to validate the efficacy of the Problem-Based Learning (PBL) approach in comprehending the horizontal and vertical components of projectile motion.

Performance on Pre-test. The data presented in Table 1 shows the pre-test results *(see Appendix F for the individual results)* of a study that aimed to determine the student's performance on horizontal and vertical components of projectile motion.

Table 1
Pre-test performance of the student-respondents on horizontal and vertical components of projectile motion

Summary of Data			
Rating	Verbal Description	F	%
85%–89%	Very Satisfactory	5	5
80%–84%	Satisfactory	8	8

75%–79%	Fairly Satisfactory	2	2
74% and below	Did Not Meet Expectations	85	85
Total		100	100.00
Mean		16.8700	
SD		4.50	

The table showed that the student respondents did not exceed the Department of Education's (DepEd's) passing standard, with a standard deviation of 4.50 for projectile motion. It indicated that the students were struggling with their understanding at that level. The proficiency level or academic performance at which the students were performing was determined according to the criteria outlined in DepEd Order No. 8, issued in 2015. The fundamental knowledge and skills had not been acquired or developed adequately to aid in the understanding of students.

Tabiolo's (2018) research supported the conclusions of the current study, showing that most students were performing poorly and falling significantly below the Department of Education's passing standard. This highlights a deficiency in the acquisition and development of fundamental knowledge and skills necessary for understanding horizontal and vertical components of projectile motion. As a result, there is a pressing need for targeted interventions and educational support to improve student comprehension in this area.

Performance on Post-test. The data presented in Table 2 shows the post-test results *(see Appendix F for the individual results)* of a study that aimed to determine the student's performance on horizontal and vertical components of projectile motion.

Table 2
Post-test performance of the student-respondents on horizontal and vertical components of projectile motion

Summary of Data			
Rating	Verbal Description	F	%
90% and above	Outstanding	87	87
85%–89%	Very Satisfactory	3	3
80%–84%	Satisfactory	10	10
Total		100	100.00
Mean		28.43	
SD		1.74	

The results presented in Table 2 illustrate the post-test performance of student respondents regarding the horizontal and vertical components of projectile motion. Impressively, a significant majority of students, accounting for 87%, achieved an "Outstanding" rating by scoring 90% or higher. This high percentage reflects a commendable understanding and mastery of the subject matter. However, a small portion of students, comprising 3% and 10% respectively, fell into the categories of "Very Satisfactory" and "Satisfactory," indicating some variability in performance among the cohort. Despite this variability, the overall mean score of 28.43, coupled with a relatively low standard deviation of 1.74, suggests a consistent and high level of achievement across the student body. The proficiency level or academic performance at which the students were performing was determined according to the criteria outlined in DepEd Order No. 8, issued in 2015.

The results suggest that the teaching methods and materials used were successful in helping students learn. This is consistent with modern research, which shows that good teaching practices and matching the curriculum well often lead to high levels of success (Mugot & Sumbalan, 2019). The high average score and low variation among scores indicate that students consistently achieved well overall. This indicates that the teaching methods used effectively helped students grasp the concepts of projectile motion. Recent studies by Johnson et al. (2019) highlight the significance of clear explanations and feedback in improving student performance, which aligns with the findings.

Performance on Problem-solving Skills and Critical Thinking in the Context of the Projectile Motion of the Student-respondents

The data presented in Table 3 illustrate the comparison between the pre-test and post-test mean scores of student-respondents, showcasing their performance in problem-solving skills and critical thinking within the framework of projectile motion when utilizing the Problem-Based Learning (PBL) Approach.

As shown in the table, the results of the t-test for independent samples analysis are revealed in Table 3, comparing the pre-test and post-test mean scores

Table 3
Comparison of Pre-test and Post-test Scores of Student-Respondents

Group	Mean	SD	t-value	p-value	Interpretation/Decision
Pre-test	16.87	4.50	26.300	0.001	Significant/Reject H_0
Post-test	28.43	1.74			
Difference	11.56				

$\alpha = 0.05$; df = 99; two-tailed

of the respondents. The substantial increase in mean scores from the pre-test to the post-test, by approximately 11.56 points, underscores the impact of this teaching methodology. Statistical analysis further confirms the significance of this improvement, with a high t-

value of 26.300 and a low p-value of 0.001, indicating that the observed enhancement is unlikely to be due to chance. These findings suggest that the PBL Approach has successfully engaged students and facilitated deep learning, leading to tangible academic growth. This underscores the potential of active learning strategies, such as PBL, in enhancing student learning outcomes, particularly in complex subjects like projectile motion. Moreover, the data underscores the value of innovative teaching methodologies in nurturing critical thinking and problem-solving abilities among students.

To corroborate the findings in Table 3, Lim and Tai (2017) found that students participating in problem-based learning (PBL) demonstrated notable enhancements in their comprehension of course content, problem-solving skills, and overall academic achievements in contrast to students in conventional lecture-oriented classes.
A study by Brown et al. (2023) examined the impact of PBL on critical thinking abilities among physics students. Their findings revealed that students who participated in PBL-based instruction exhibited higher levels of critical thinking, as evidenced by their ability to analyze, evaluate, and synthesize information related to projectile motion. This suggests that PBL fosters the development of critical thinking skills by encouraging students to explore multiple perspectives and engage in collaborative problem-solving.

Longitudinal studies by Chen et al. (2021) examined the long-term effects of PBL on problem-solving skills and critical thinking in physics education. Their findings indicated that students who experienced PBL-based instruction maintained higher levels of problem-solving skills and critical thinking abilities over time, even after completing the course. This suggests that PBL promotes enduring improvements in these cognitive skills, particularly in the context of projectile motion and other complex physics topics.

Conclusions

Based on the salient findings of the study, which highlight the developed PBL projects of the students, performance on the pre-test and post-test of the students, and performance of the students on problem-solving skills and critical thinking in the context of the projectile motion, the following conclusions were drawn:

1. The projects developed by students from the Pagsanghan National High School Junior High School Department offered a remarkable display of creativity, ingenuity, and mastery of projectile motion principles. Each project, meticulously crafted and named to reflect the spirit of its section, showcased the intricate relationship between horizontal and vertical components in projectile motion. From the Masipag Pencil Trebuchet to the Masigasig Triangular Bamboo Catapult, students exhibited a deep understanding of projectile motion principles, which was evident in their consideration of factors like launch angle and projectile mass. Their commitment to systematic experimentation and innovative design solutions underscored their problem-solving skills and critical thinking abilities. Moreover, the choice of materials and presentation quality reflected their creativity and dedication to excellence. These projects did not

only deepen their understanding of theoretical concepts, but also equipped them with essential skills for success in STEM fields and beyond.

2. In pre-test and post-test, the findings underscored the transformative potential of Problem-Based Learning (PBL) in addressing learning gaps and fostering deep comprehension of projectile motion concepts among students. While the pre-test results revealed a concerning deficit in understanding, the significant improvement observed in the post-test outcomes highlighted the efficacy of PBL methodologies in facilitating student learning and mastery. The high percentage of students achieving an "Outstanding" rating reflected not only their enhanced comprehension, but also the development of critical thinking skills through PBL. Moreover, the consistent performance across the student body suggested that PBL had a widespread and positive impact on student learning outcomes. These findings emphasized the value of continued integration of PBL and other innovative teaching strategies to promote academic excellence and prepare students for success in STEM fields.

3. The findings underscored the PBL approach's ability to effectively engage students and foster deep learning, resulting in tangible academic advancement. It emphasized the importance of employing active learning strategies, such as PBL, in cultivating critical thinking and problem-solving skills, which were indispensable for success in STEM disciplines and beyond. By leveraging innovative teaching methodologies like PBL, educators could empower students to become adept problem-solvers and critical thinkers, equipping them with the skills needed to thrive in an increasingly complex and dynamic world.

Recommendations

Based on the findings and conclusions derived from the investigation into students' educational encounters employing the Project-Based Learning (PBL) Approach, the following suggestions are hereby proposed:

1. Prioritize hands-on projects in science education to allow students to actively participate in project development, apply theoretical knowledge to practical scenarios, and nurture critical thinking, problem-solving, and inquiry-based learning skills. The positive outcomes demonstrated by the projects developed to showcase horizontal and vertical components of projectile motion highlight the value of hands-on learning experiences in STEM education.

2. Foster collaborative learning environments to promote teamwork skills, idea exchange, and peer support among students, enhancing academic performance and cultivating a sense of community. The collaborative nature of the projects developed to showcase projectile motion components underscores the importance of collaboration in science education, which enriches the learning experience and promotes student success.

3. Implement targeted interventions and educational support to improve student comprehension of projectile motion concepts, addressing knowledge gaps through additional tutoring sessions, interactive workshops, or supplementary learning materials. The disparity between pre-test and post-test scores emphasizes the need for targeted interventions to enhance student understanding in specific areas of science education.

4. Utilize the Problem-Based Learning (PBL) approach in STEM education to engage students, facilitate deep learning, and foster tangible academic growth, particularly in complex subjects like projectile motion. The success observed in student performance on problem-solving skills and critical thinking underscores the effectiveness of PBL in enhancing learning outcomes.

Compliance with Ethical Standards

The researcher took measures to maintain the anonymity of the learner-respondents to protect their reputations and dignity. This involved ensuring that the learner-respondents were informed about the details of the study and their rights.

Furthermore, the study obtained the necessary permissions from the institution before its commencement, following the appropriate protocols. To ensure that the study was conducted in an ethical way, language and communication approaches appropriate for the specific age range under consideration were used. This involved the simplification of consent forms, instructions, and materials used in debriefing. The researcher established procedures for obtaining assent in addition to parental consent, guaranteeing that minors comprehended the research procedures and willingly agreed to participate to the best of their capacity. The respondents were made aware of all the materials used to collect the data, but their identities and responses were kept private. The research objectives were provided to the respondents. Consequently, the well-being of participants was regularly monitored throughout the study. The researcher was prepared to modify or terminate the research if unexpected issues arose. Consent was sought from the respondents, granting them the option to consent or decline participation in the study. Hence, the collected data were made accessible to the respondents, while ensuring the utmost respect and consideration for their rights during the reporting of the data. Finally, the anonymity of the respondents was prioritized and maintained throughout the study.

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TEACHERS' ATTITUDES AND CHALLENGES TOWARDS USE OF MOTHER TONGUE-BASED INSTRUCTION

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ABSTRACT

This study delves into the attitudes and challenges faced by teachers in implementing mother-tongue-based instruction (MTBI) in Isabela province, Philippines. A comprehensive analysis was conducted based on demographic profiles and survey responses from teachers across various grade levels. Findings reveal a predominant demographic profile among teachers, characterized by ages between 29-33 years, predominantly female, with educational backgrounds encompassing master's units and fluent in the local language, *Iloko*. Overall, teachers exhibited a positive attitude towards MTBI, particularly those teaching in Kindergarten to Grade 3, as evidenced by their agreement with statements related to MTBI principles. Moreover, significant relationships were observed between teachers' attitudes towards MTBI and demographic factors such as age, sex, place of origin, educational background, mother tongue, and years of teaching experience. Finally, teachers identified several challenges hindering effective MTBI implementation, which include resource constraints, translation difficulties, and conflicts between different varieties of mother tongues. These findings underscore the importance of addressing these challenges to enhance the effectiveness of the MTBI program and ensure quality education for all learners.

Keywords: *Teachers' Attitudes, Challenges, Mother tongue, Mother-tongue-based Instruction*

INTRODUCTION

Language in education is a concept clearly defined as it has been established in many studies. Learners particularly young children enter the classroom speaking in one or more languages, depending on their level of skill or proficiency (Walter, 2008). Most children go to school speaking only one primary language, while those in cities usually show some level of bilingualism, according to Baker (2006). Teachers may or may not speak the language(s) that their pupils use in the classroom. The curriculum might be offered in one language but not another, or in a language that neither the teacher nor the pupils are fluent in.

As a result, a learner's educational growth is fundamentally influenced by the language of instruction in a classroom. Language and literacy are seen as socially produced, culturally mediated practices, and they are essential to learning according to Ochs (1986). In other words, choosing the language or languages to teach in schools is an important decision in bilingual and multilingual societies like the Philippines.

Mother Tongue-Based Multilingual Education (MTB-MLE), an educational policy incorporating more than one language in literacy and instruction, is a recent development in the Philippine educational system. However, according to Nolasco (2008), simply changing the MOI is insufficient to make the MTB-MLE work in the Philippine setting. He identified four critical requirements for the successful implementation of the MTB-MLE program, one of which is community support and empowerment. He also mentioned that one of the reoccurring concerns is teachers' attitudes regarding the mother tongue as a medium of instruction, whether good or negative.

As educators consider the language they employ in the classroom, their attitudes become more apparent. Whether they are aware of it or not, their attitudes have a significant impact on how languages develop, deteriorate, or are restored (Baker, 1988). According to Rillo and Alieto (2018), teachers' attitudes serve as either an enabling or disabling factor in the use of a certain language. Additionally, as a result of their cultural orientation, the teachers have a significant influence on their younger students (Shameem, 2004). Finally, the teacher's preparation should include their attitude toward the resources they will use to teach their courses as well as their knowledge and expertise in that area of expertise (Vizconde, 2006).

According to Sarnoff (1970), attitude is the propensity to respond favorably or unfavorably to a group of objects. The same goes for attitude, which Bohner and Wanke (2002) even went so far as to say typically indicates an evaluation of an object. As a result, attitude can be defined as a cognitive, emotive, and behavioral response to any object. Furthermore, Eagly and Chaiken (1993) hypothesized that attitude can elicit three kinds of responses. The first is cognitive responses, which correspond to an individual's thoughts and beliefs about the object of their attitude. Second, emotional responses that elicit feelings or emotions about the object of an attitude, and third, behavioral responses that entail acts taken to the object of an attitude. These three responses frequently

overlap, making it difficult to distinguish them (Zhang, 2010). However, according to Bohner and Wanke (2002), attitude is commonly described as a summary appraisal of a thought object that may include only one answer type or a combination of two or all three categories.

As a result, an attitude is a hypothetical construct that cannot be directly observed but can be inferred from observed reactions (Eagly & Chaiken, 1993). In other words, when specific stimuli, such as the use of the mother tongue in teaching Grades 1–3, elicit responses, a mental state known as attitude is formed.

The success of MTB-MLE being an important component of the K to 12 curriculum lies much in the attitude of teachers towards the language they use for instruction. Such an attitude is crucial in meeting the objectives of mother tongue-based instruction. There have been local studies that explored teachers' attitudes toward mother-tongue-based instruction (Tonio and Ella, 2019; Wa-Mbaleka, 2014; Lartec et al., 2014). These studies dealt as well the problems encountered by the teachers in the implementation of MTBI.

As an elementary teacher, the researcher has observed that her fellow teachers using mother-tongue-based instruction have different feelings toward it. Some are happy but others are not. They also talk about the challenges they meet with using mother tongue in teaching. These are teachers from Kindergarten level to Grade 3. Personally, the researcher sees the importance of Mother Tongue-Based Instruction in early education, believing that it can help pupils learn various concepts. But, she also recognizes the problems or issues that surround the implementation of MTBI which include among others the dearth of instructional materials, lack of training of the teachers, and their lukewarm reception of the use of pupils' mother tongue.

Thus, in consideration of the above, the researcher was prompted to conduct this study. The study aimed at determining the attitudes of teachers toward the use of the mother tongue as a medium of instruction in Kindergarten to Grade 3 and the problems they meet when using the mother tongue. The results of the study are deemed beneficial as they will reveal how teachers at the elementary level feel about the use of the mother tongue and the struggles they encounter with it. These pieces of information could later be used for decision-making by higher authorities for important educational programs.

Research Questions

This study investigated the teachers' attitudes toward the use of the mother tongue as a medium of instruction in Kindergarten to Grade 3 and the challenges they encounter.

Specifically, it sought to answer the following questions:

1. What is the profile of the teachers as to:
    a. age
    b. sex
    c. place of origin (province)
    d. educational background
    e. mother tongue used

f. number of years of language teaching experience
2. What are the attitudes of teachers toward mother-tongue-based instruction in Kindergarten to Grade 3?
3. Is there a relationship between teachers' attitudes towards mother-tongue-based instruction and select variables?
4. What are the teachers' perceived challenges or problems in using the mother tongue as a medium of instruction in Kindergarten to Grade 3?

METHODOLOGY

The research design used in the study was descriptive-correlational. The study was conducted in seven (7) elementary schools in the City Schools Division of Ilagan, Isabela. Involved as respondents in this study were basic education teachers in public elementary schools who teach at the kindergarten level, Grade 1, Grade 2, and Grade 3. These teachers use a mother tongue as a medium of instruction.

Before conducting the study or gathering data, the researcher sought the approval of the school heads of the different elementary schools covered in the study. This was done by way of a request letter. After getting the approval, the researcher personally administered the survey questionnaire and conducted personal interviews with the respondents.

The main instrument to be used in this study was a survey questionnaire adapted from the study of Tonio and Ella (2019) entitled "Pre-Service Teachers' Attitudes toward the Use of Mother Tongue as Medium of Instruction" which was published in the Asian EFL Journal. The present study used the instrument as is, finding all the statements fit to Philippine context. Moreover, this questionnaire earned a reliability rating of 0.80 using Cronbach's Alpha when it was used in previous studies.

The survey questionnaire was divided into two parts. In Part 1, respondents were asked to provide pertinent personal information such as gender, age, province, first language, and whether or not their native language is different from the mother tongue identified/declared by the Department of Education for their city or province.

Meanwhile, the fourteen (14) statements included in Part II are of two levels. Level 1 includes items 1-12 which sought the opinions of the teachers on some issues and problems related to teaching and learningin the mother tongue such as the benefits of teaching and learning in the mother tongue to pupils, teachers, andparents, as well as the limitations of instruction in the mother tongue.

On the other hand, Level 2 comprised items 13 and 14 that explore the teachers' readiness to undergo training in mother tongue instruction and their willingness to teach in the mother tongue.

Part III of the questionnaire required the respondents to rank the statements (1-

11) indicating perceived problems in the use of mother tongue-based instruction in Kindergarten to Grade 3. They may also add to the list of problems.

Before conducting the study or gathering data, the researcher sought the approval of the school heads of the different elementary schools covered in the study. This was done by way of a request letter. After getting the approval, the researcher personally administered the survey questionnaire and conducted personal interviews with the respondents.

Data were analyzed using descriptive statistics, namely: frequency count,mean, mode, and standard deviation. The chi-square test for independence using the SPSS application was to be used to establish the relationship between variables. Moreover, a qualitative approach was employed to analyze the perceived problems in using the mother tongue.

Analysis of data used in determining teachers' attitudes towards the use of mother tongue-based instruction is shown below:

Scale	Range	Description
4	4.00 – 3.00	Strongly Agree
3	2.99 – 2.00	Agree
2	1.99 – 1.00	Disagree
1	1.00 – 0.99	Strongly Disagree

RESULTS AND DISCUSSION

Profile of the Teachers

Profile of the teachers in terms of age, sex, educational background, mother tongue used, and language teaching experience is provided and discussed below.

Table 1 presents a diverse age distribution among the respondents. Based on the data, the most common age group among the respondents is 29-33 years old, accounting for 24.24 percent of the total respondents. On the other hand, the least common age group is 34-38 and 44-49 years old, comprising 18.18 percent of the total respondents. The findings suggest that most of the teacher-respondents are already in their late 20's and early 30's. which means that there are more young teachers, as might be expected from the large numbers participating in the Teacher Induction Scheme in recent years.

Table 1. Frequency and percentage distribution of the teachers in terms of age

Age	Frequency	Percentage
24–28	6	18.18
29–33	8	24.24
34–38	6	18.18
39–43	7	21.21
44–49	6	18.18
Total	**33**	**100**

These results coincide with the findings of Salvan and Hanbre (2020) indicating that out of 16 teachers who participated, 50% were between 27 and 32 years old. This means that if the starting age of a teacher to enter a teaching profession right after graduation is 21 years old, then these teachers are just developing their teaching profession.

Table 2. Frequency and percentage distribution of the teachers in terms of sex

Sex	Frequency	Percentage
Female	26	78.79
Male	7	21.21
Total	**33**	**100**

It can be gleaned from Table 2 that the survey sample was predominantly composed of females, with 26 out of 33 respondents which is approximately 79 percent. In contrast, males made up a smaller proportion, accounting for only around 21 percent of the total respondents. The analysis highlights a pronounced gender disparity among the survey respondents, with females comprising the majority of the sample. The results suggest that there are more female teachers since it has been viewed that education is a female-dominated profession.

Globally, women are over-represented in the teaching force. And their numbers are rising: Since 2015, globally, the proportion of female teachers has increased across primary, lower, and upper secondary levels. In pre-primary education, women make up 94% of the teaching force. But at higher levels of education, their numbers dwindle. Women make up 68% of the teaching force in primary, 58% at lower secondary, 52% at upper secondary, and 43% at tertiary level (UNESCO, 2023). In contrast, Statista Research Department which published data in October 2022, showed that the employment rates of males and females worldwide since 2000. Employment rates of males have been consistently higher than women, the gap barely narrowing in the two decades. In 2000, the employment rate for males was around 73% compared to nearly 48% for females. Trends slightly decreased for both genders till 2019, after which there was a significant decline in 2020. The rates for both genders increased till 2022 (67.86% for males and 43.82% for females) but were overall lower than in 2000. However, the gender gap in employment rates remained approximately the same over the years (Zoe

Talent Solutions, 2024). Additionally, an article published that in 2022, 67.9 percent of men ages 25 and older were employed, compared with 55.4 percent of women.

While men have higher employment-population ratios than women at every level of educational attainment, the gap between men and women becomes smaller as educational attainment increases (The Economics Daily, 2023).

Table 3. Frequency and percentage distribution of the teachers in terms of place of origin (Province)

Place of Origin (Province)	Frequency	Percentage
Cagayan	1	3.00
Isabela	32	97.00
Total	**33**	**100**

As shown in Table 3, the majority of the respondents, constituting 97.00%, were from Isabela province. Only a small fraction, accounting for 3.00%, were from Cagayan province. This means that the Isabela province has a significantly higher representation compared to Cagayan.

Table 4 contains data on the frequency and percentage distributions of respondents in terms of Highest Educational Attainment. The majority of the respondents, comprising 76%, completed some units toward a Master's degree. This suggests that a significant portion of the respondents have pursued further education beyond their bachelor's degree but have not necessarily completed their master's program. On the contrary, individuals holding doctorate degrees comprised the smallest subset of respondents, accounting for only 3% of the total.

Table 4. Frequency and percentage distribution of the teachers in terms of educational background

Educational Background	Frequency	Percentage
Baccalaureate Degree Holder	3	9
With Master’s Units	25	76
Master’s Graduate	4	12
Doctorate Degree Holder	1	3.00
Total	**33**	**100**

The results suggest that the surveyed population is predominantly composed of individuals who have pursued or are in the process of pursuing higher education beyond the bachelor's level, with the majority having completed or partially completed Master's level education.

The results are in agreement with the results of a study that revealed that 66.7 percent (67%) of the teachers were pursuing their master’s degree program. About 17

percent (17%) of them have either obtained their master's degree or are pursuing doctorate programs. Teachers are required to participate in professional development sessions and take additional college courses to maintain their current certification. Getting a master's degree at the beginning of a teaching career gives educators more flexibility when it comes to choosing later courses. This also provides educators with an opportunity to take even higher-level courses, work toward a doctorate in education, and connect with other experts in the field (Salvan and Hanbre, 2020).

Table 5. Frequency and percentage distribution of the teachers in terms of mother tongue used

Mother Tongue Used	Frequency	Percentage
Iloko	21	64.00
Tagalog/Filipino	11	33.00
Ybanag	1	3.00
Total	**33**	**100**

As shown in Table 5 above, the majority of respondents, comprising 64.00 percent, used Iloko as their mother tongue. This indicates a significant presence of Iloko speakers within the surveyed population. Tagalog/Filipino speakers represented 33.00 percent of the respondents, constituting a substantial but smaller portion than Iloko speakers. Ybanag speakers were the least represented, accounting for only 3.00 percent of the respondents. This means that Ilocano is the language spoken by a majority of the people in Isabela.

Isabela today is home to, 1,593,566 people who are distinguished for their resilience and diligence. The majority of them are classified as Ilocanos, who constitute 69% of total households. Two other prominent ethnolinguistic groups are Ybanag at 14% and Tagalog at 10%. The balance of 7% belongs to the *Gaddang, Paranan, Yogad*, and other indigenous tribes (The Official Website of the Province of Isabela, 2023).

Table 6. Frequency and percentage distribution of the teachers in terms of the number of years of language teaching experience

Number of Years of Language Teaching Experience	**Frequency**	**Percentage**
1–3	5	15.15
4–6	10	30.30
7–9	8	24.24
10–12	10	30.30
Total	**33**	**100**

As seen in the above data (Table 6), most of the respondents fell within the 4-6 and 10-12 years categories. The categories of 4–6 years and 10–12 years of experience each comprised 30.30 percent of the respondents, indicating a prevalence of mid-career

language teachers within the sample. This suggests that a substantial portion of the respondents have attained a moderate to advanced level of experience in language teaching, possibly reflecting a stable or established phase in their career. There were only five (5) teachers or approximately 15 percent of the respondents who were in the range of 1-3 years in service. This implies that among the 33 respondents, there are very few of them who are new in the teaching profession.

Research shows that, on average, teachers with more than years of experience are more effective than teachers with no experience, but are not much more effective than those with 5 years of experience (Ladd, 2008). Studies have also documented some evidence that effectiveness declines after some point, particularly among high school teachers. In fact, evidence suggests that the most experienced high school mathematics teachers greater than (25 years) may be less effective than their less experienced counterparts (Ladd, 2008) and even their inexperienced colleagues (Harris and Sass, 2007).

Attitudes of Teachers towards Mother-Tongue-Based Instruction

The attitudes of teachers towards mother-tongue-based instruction are revealed in the following table.

Table 7. Attitudes of teachers towards Mother-Tongue-Based Instruction in Kindergarten to Grade 3

Indicators	Mean	Sd	Description
1. A policy on the use of mother tongue in the Philippine primary schools (Grades 1-3) is good in principle.	2.90	0.94	Agree
2. It is possible to teach all primary school subjects from Grades 1-3 in the mother tongue or language of the local community.	2.69	1.01	Agree
3. It is possible to teach my subjects completely in mother tongue.	2.60	0.86	Agree
4. Teaching in their mother tongue will enable teachers to express themselves clearly in class.	2.87	0.92	Agree
5. Teaching in mother tongue will enable pupils tounderstand easily.	2.81	1.04	Agree
6. It will make lessons interesting to pupils.	2.97	0.77	Agree
7. It will enable children to perform well in the English language in the future.	2.30	0.81	Disagree
8. It will enable parents to participate in the education oftheir children.	3.03	0.58	Agree
9. All technical terms and expressions in my subject area(s) can be easily translated into mother tongue.	2.27	1.03	Disagree

10. Textbooks for teaching my subjects can easily beproduced in mother tongue.	2.27	0.62	Disagree
11. My education and training, which have been in English, will not interfere with my teaching children in mother tongue.	2.81	0.76	Agree
12. The use of mother tongue in teaching will degrade the teaching profession in the Philippines.	2.00	0.70	Disagree
13. I am willing to undergo any special training that willenable me to teach in mother tongue.	3.18	0.88	Agree
14. I am willing to teach in mother tongue.	2.93	0.74	Agree
Overall Mean	2.69		Agree

As shown in Table 8, statements 1, 2, 3, 4, 5, 6, 8, 11, 13 and 14 obtained a weighted mean of 2.909, 2.697, 2.606, 2.879, 2.818, 2.970, 3.030, 2.818, 3.182, and 2.939 respectively with a description of *"Agree"*. On the contrary, statements 7, 9, 10, and 12 earned a weighted mean of 2.303, 2.273, 2.273, and 2.00 respectively with a description of *"Disagree."*

Based on the findings above, it can be said that the teachers believe that a policy on the use of mother tongue in primary schools (Kindergarten to Grade III) is a good principle. It is because they can teach all primary school subjects from Kindergarten to Grade III in the mother tongue or language of the local community. Moreover, the teachers see the possibility of teaching their subjects completely in mother tongue because doing so will enable them to express themselves clearly in class which results in having students understand easily the lessons. Lessons become interesting to pupils.

It is in the teachers' view that by using the mother tongue, parents can participate in their children's education. They likewise believe that their English education and training will not interfere with their teaching using mother tongue. As they recognize the intricacy of using the mother tongue of their pupils with which they are unfamiliar, they are willing to undergo training to enable them to teach in mother tongue. This willingness to learn their mother tongue is backed further by their positive attitude toward their willingness to teach in their mother tongue.

The teachers' negative attitude toward the use of the mother tongue is exemplified by their reservation that the mother tongue will enable children to perform well in the English language in the future. They also disagree that all technical terms and expressions in their subject areas could be easily translated into mother tongue. In like manner, they do not believe that the textbooks they use in teaching their subjects could be easily produced in mother tongue. Although they see problems in using mother tongue, they do not believe that the use of it would degrade or lower the teaching profession in the Philippines.

The study's findings are consistent with those of two local studies, Tonio and Ella (2019) and Wa-Mbaleka (2014), which showed that English teachers thought MTB-MLE

would help improve mother tongue acquisition but not English language proficiency. The study conducted by Tonio (2019) and Lartec et al. (2014) revealed that the main issues encountered by teachers in implementing mother-tongue based instruction are lack of textbooks, vocabulary, and teacher-training. Meanwhile, the teachers' negative attitude toward the availability of textbooks, the possibility of concrete translation and vocabulary, and the compatibility of teachers' education and training are supported by these findings.

The current study's findings are also similar to Tonio and Ella's (2019) findings, indicating that respondents in both studies believe that using mother tongue would neither degrade or lower the teaching profession in the Philippines.

The results of this study, along with those of other foreign studies, are in opposition to those of Ejieh (2004), who found that student teachers generally had a negative attitude toward the teaching and training of mother tongue in elementary schools.

On the other hand, the results of this study demonstrating teachers' generally positive attitudes toward the use of mother tongue as a medium of instruction are corroborated by a study by Adesina and Okewole (2014), also in Nigeria, which involved teachers' opinions on mother tongue instruction in nursery schools.

Overall, teachers in Kindergarten to Grade 3 "agreed" to the use of mother-tongue-based instruction (MTBI) with an overall mean of 2.69, indicating a positive attitude. This is opposed to the findings of Andrino & Arsenal (2019) where the respondents exhibited a negative attitude towards teaching mother tongue in basic education.

Relationship between Teachers' Attitudes toward Mother-Tongue-Based Instruction and Select Variables

The table below exhibits the relationship between the teacher's attitudes toward mother-tongue-based instruction when grouped by the selected variables. ambiguous

Table 8. Relationship between the teacher's attitudes toward Mother-Tongue Based Instruction and select variables

	Regression Analysis							
Profile Variable	ρ-Value	Computed Value	ρ-Value	T	R	R^2	Decision	Remarks
Age	0.0026	10.6981	0.0000	5.9319	0.2566	0.5065	Reject H_0	Significant
Sex								
Place of Origin								
Educational Background								
Mother Tongue								

No. of Years of Language Teaching								

The low ρ-value = 0.0026 suggests that there is strong evidence against the null hypothesis, indicating that the observed data are unlikely to have occurred if the null hypothesis were true. The computed value 10.6981 represents some specific statistic calculated in the analysis. The correlation coefficient R of 0.2566 indicates a weak positive linear relationship between the variables. The R-squared value 0.5065 suggests that approximately 50.65 percent of the variance in the dependent variable can be explained by the independent variable(s).

Given the significant result and rejection of the null hypothesis, there is evidence to support an alternative hypothesis or the presence of a relationship between the variables under consideration. This suggests that there is a moderate correlation between the predicted data and the observed data.

The above findings are contradicted by the results of the study of Tonio and Ella (2019) where the age and sex of the pre-service teachers were found to have no significant relationship with their attitudes toward the use of mother-tongue-based instruction. However, in the same study, place of origin was found to have a relationship with MTBI.

From the findings above, it can be surmised that the attitudes of the teachers toward the use of mother-tongue-based instruction are influenced by their age, sex, place of origin, educational background, mother tongue, and number of years of language teaching experience.

Challenges Encountered by Teachers in the Use of Mother-Tongue-Based Instruction

Table 9 reveals the teachers' perceived challenges or problems in using the mother tongue as a medium of instruction in Kindergarten to Grade 3.

Table 9. Problems or challenges perceived by teachers in the use of Mother-Tongue as a medium of instruction in Kindergarten to Grade 3

Perceived Challenges/Problems	Rank
a. Difficulty in translation	2
b. Difficulty in teaching the different varieties of MT	3
c. Degradation of English language proficiency	8
d. Difference in teacher's and pupils' L1	4
e. Lack of textbooks, references and instructional materials	1
f. Lack of teachers' training in teaching mother tongue	7
g. Low teachers' proficiency in mother tongue	9
h. Low pupils' proficiency in mother tongue	6

i. Incompatibility of MT used by pupils and of MT assigned by DepEd	5
j. Language barrier for transferees and pupils with different L1	10
k. Resistance of parents to using MT as a medium of instruction	11

As evident in the data presented, the problem of "*Lack of textbooks, references, and instructional materials"* ranked first. This challenge suggests a significant barrier to effective instruction in the mother tongue. Insufficient resources can hinder lesson planning, curriculum implementation, and student engagement. It explains thus why the teachers showed negative attitude towards the easy production of textbooks which they can use to teach their subjects. The above findings are consistent with local studies like that of Lartec, et.al (2014) which showed that teachers teaching mother tongue encountered difficulties due to the absence of books written in mother tongue, and of Valerio (2015) indicating teachers' uncertainty with the instructional materials they use due to lack of localized translation of these materials.

"*Difficulty in translation"* was second in rank. This implies that translation challenges can impede the smooth transition of content from one language to another, affecting comprehension and instructional quality. The teachers have difficulty explaining concepts or lessons in subjects like Math, Science, *Araling Panlipunan* (AP), Music Arts, Physical Education and Health (MAPEH), etc. using mother tongue. Difficulty is specifically encountered in the translation of technical terms and Math concepts (Tonio and Ella, 2019). Because some English terms have no exact translation or equivalents in mother tongue, the teachers have to resort to English (Medilo, 2016).

The teachers' difficulty in translation accounts for their negative attitude towards it. They are uncertain whether all technical terms and expressions in their subject area(s) can be easily translated into mother tongue.

Another perceived problem that ranked third was the teachers' "*Difficulty in teaching the different varieties of mother tongue*". This indicates that variations in the mother tongue spoken by students can pose challenges for teachers in accommodating diverse linguistic backgrounds, potentially affecting instructional effectiveness. This problem relates to other two identified problems, namely the "lack of teachers' training in teaching mother tongue", and the "lack of textbooks, references, and instructional materials."

Similarly, the "*Difference in teacher's and pupils' L1 "* was also perceived by teachers as a challenge. They ranked this problem as fourth among the different perceived challenges. This suggests that discrepancies between the language proficiency levels of teachers and students may hinder effective communication and instruction, impacting learning outcomes. Differences between a teacher's and pupils' first language (L1) can indeed pose challenges in mother-tongue-based instruction. When the teacher and students do not share the same L1, communication barriers may arise,

hindering effective instruction and learning. These barriers can manifest in various forms, such as difficulty in conveying complex concepts, misunderstanding instructions, and challenges in providing feedback.

A study by Cummins (2000) highlights how language differences between teachers and students can impede comprehension and engagement in the classroom. Cummins emphasizes the importance of utilizing students' mother tongue in instruction to bridge these gaps and facilitate better learning outcomes.

"*Incompatibility of mother tongue used by pupils and of mother tongue assigned by DepEd*" occupied Rank 5 in the teachers' perceived challenges. Misalignment between the mother tongue spoken by students and the one designated by the Department of Education can create confusion and hinder effective instruction.

Moreover, ranked 6 as the perceived challenge was the "*Low pupils' proficiency in the mother tongue".* This implies that the limited proficiency in the mother tongue among students may hinder their ability to fully engage with instructional materials and comprehend lesson content.

Ranked 7th was "*Lack of teachers' training in teaching mother tongue"*. Insufficient training and professional development opportunities for teachers can result in ineffective instructional strategies and limited support for students' language development.

"*Degradation of English language proficiency*" was ranked 8. To some, teaching children using mother tongue can contribute to lack of English proficiency. It could mean that an increased focus on the mother tongue may lead to neglect or a decline in English language proficiency, which could have broader implications for students' academic and future opportunities. The same problem was found in Ejieh's (2004) study in Nigeria where the use of mother tongue harmed English learning.

Ranked 9 was the "*Low teachers' proficiency in the mother tongue"* Limited proficiency among teachers in the mother tongue may compromise their ability to effectively convey lesson content and support students' language development. This problem is related to difficulty in translation (Tonio and Ella, 2019). Teachers experience hard time expressing themselves in the mother tongue understood by the students because of a lack of training and unfamiliarity with the language.

Positioned in the 10th place was the "*Language barrier for transferees and pupils with different L1*". Students who transfer from other regions or have a different first language may face challenges in adapting to instruction conducted in the mother tongue, potentially affecting their academic progress. This is another problem met by the teachers. Adjusting to the L1 of transfer students is an added burden for them.

In the 11th rank was the "*Resistance of parents in using mother tongue as a medium of instruction"*. Because many parents do not understand the importance of using mother tongue as a medium of instruction, they object to its use. In an interview with the

parents, they are opposed to using mother tongue as MOI because they believe that it will not help their children acquire English proficiency. Indeed, parental resistance can undermine efforts to implement mother tongue-based instruction, affecting support systems and community engagement.

As presented in the table, these perceived challenges underscore the complexities involved in implementing mother tongue-based instruction in early education settings, highlighting the importance of addressing resource limitations, linguistic diversity, teacher training, and community engagement to ensure effective language learning and educational outcomes.

Conclusions

Based on the findings presented in this study, several key conclusions can be drawn. First, the demographic profile of teachers involved in the implementation of mother-tongue-based instruction (MTBI) reveals a predominantly female, mid-career group from Isabela province, with a significant portion holding master's units and speaking *Iloko*. Second, the positive attitudes exhibited by teachers towards MTBI, particularly in Kindergarten to Grade 3, signify a readiness to embrace this instructional approach. However, the presence of challenges, such as the lack of essential resources and difficulties in translation and language variation, underscores the need for targeted support and interventions. Furthermore, the identified relationship between teachers' attitudes towards MTBI and various demographic factors emphasizes the importance of considering individual characteristics in the successful implementation of MTBI. Finally, addressing these challenges and leveraging the positive attitudes of teachers toward MTBI are crucial steps toward enhancing its effectiveness and promoting inclusive and culturally responsive education.

Recommendations

Based on the findings and conclusions drawn, the study on mother-tongue-based instruction (MTBI) implementation recommends the following:

1. The Department of Education (DepEd) is encouraged to address the identified shortage of textbooks, references, and instructional materials by allocating adequate resources to schools implementing MTBI. This may involve collaborating with publishers and educational organizations to develop and distribute materials tailored to various mother tongues.

2. Targeted training and professional development programs for teachers should be offered to enhance their translation skills, teach different varieties of mother tongues, and

effectively integrate MTBI into their classrooms. These programs should also address the specific needs and challenges identified among teachers of different demographics.

3. The Department of Education should ensure alignment between the mother tongue used by the learners and that what it assigned. This may involve reviewing and adapting curriculum guidelines to reflect the linguistic diversity of students while maintaining consistency with educational standards. Language mapping is highly recommended.

4. Support networks or communities of practice where teachers can share experiences, resources, and best practices related to MTBI implementation have to be established by schools through the support of DepEd. Encouraging collaboration and knowledge exchange among educators can help address common challenges and promote continuous improvement.

5. Teachers in the elementary level particularly those using MTBI are encouraged to conduct further research to better understand the impact of MTBI on student learning outcomes, linguistic development, and cultural identity. Continuous evaluation of MTBI programs is essential to identify areas for improvement and inform evidence-based decision-making.

Compliance with Ethical Standards

The researcher declares adherence to ethical standards in research, i.e., she followed all procedures and methodologies with utmost integrity, transparency, and respect for the rights and welfare of all participants involved. Prior to the conduct of the study, informed consent was obtained from the participants. Furthermore, there was no conflict of interest in the conduct of the study. The researcher also ensured that plagiarism was strictly avoided, that there was no bias in the interpretation of the findings of the study, and that the results were used solely for the study.

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TEACHERS' JOB SATISFACTION, DEGREE OF BURNOUT, AND STRESS PREVENTATIVE COPING STRATEGY: BASIS FOR DEVELOPMENT OF MENTAL HEALTH AND PSYCHOSOCIAL SUPPORT (MHPSS) ACTIVITIES

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ABSTRACT

Teachers' mental health is a crucial factor in students' academic performance as it affects the teachers' ability to deliver instructions and motivate learners. This study aimed to determine the teachers' demographic profile, job satisfaction, degree of burnout, and stress-preventative coping strategies and use these as the basis for the development of Mental Health and Psychosocial Support (MHPSS) activities. This study utilized the descriptive-correlational research design; a survey questionnaire was used to collect data from 139 teachers of Kasiglahan Village Elementary School, Montalban, Rizal, Philippines. It employed a stratified random sampling technique to select a sample size of 139 teachers from the total population of 215 teachers. The study found that the teachers' job satisfaction (M=4.03, SD=0.87) is verbally interpreted as 'satisfied', the teachers' degree of burnout (M=3.30, SD=2.07) is verbally interpreted or frequently felt 'at least once a month', and the teachers' stress preventative coping strategy (M=4.16, SD=0.69) is verbally interpreted as 'agree' with the list of coping strategies provided in the questionnaire. The chi-square analyses revealed that teachers' age group is positively correlated to the level of job satisfaction ($\chi 2=.029$, $p<0.05$). These findings suggest that teachers' age group affects their overall job satisfaction; thus, schools must sustain research-based mental health activities. The school environment should build a culture that displays a high level of gratification and promotes social and emotional competency in all employees. Capitalize on intangible factors like communication, boosting confidence, respect for oneself and others, optimism, trust, problem-solving skills, coping skills, and a sense of purpose.

Keywords: *Job satisfaction, degree of burnout, stress preventative coping strategy, mental health and psychosocial support*

INTRODUCTION

Teachers' mental health is an essential aspect in students' academic performance as it boosts the teachers' aptitude to provide quality instructions and stimulate learners' critical thinking. Thus, it is important to sustain teachers' mental health and help them cope with the different stressors. In a study completed by Yale Center for Emotional Intelligence among American teachers during pandemic, it found that there were an increase in anxiety among teachers since COVID-19 pandemic and this increase was associated with balancing their families and their needs while working full-time and learning how to use technology (Yale School of Public Health, 2020). In the Philippines, although Filipino teachers demonstrated optimistic viewpoint in life amid the pandemic, psychological stress or anxiety is obvious in their lives due to the fact that their lifestyle had adjusted and they were worried about the safety of their loved ones (Talidong & Toquero, 2020).

The result of this research is envisioned to be a basis for development of mental health and psychosocial support activities, wherein the topics for the webinars are based on the perceived needs of the teachers gained through a systematic manner. The result of this study further pinpointed the most proximal contributing factor of teachers' burnout, and guides school administrators to recalibrate their course of actions in providing the needs of the teachers. It has an end view for social and educational betterment among teachers, through understanding their job satisfaction, burnout, and stress preventative coping strategy.

Legal Basis for the Implementation of Mental Health and Psychosocial Services

Every year the Schools Division of Rizal conducts a Monitoring of School Readiness to ensure the readiness of all schools in the opening of classes. The activity further aims to measure the capacity of the schools to implement and sustain the school programs despite of different adversities. For the past three years, Mental Health and Psychosocial Services (MHPSS) are included in the school readiness checklist. In the Division Memorandum No. 380, s. 2020, titled "Online Monitoring and Validation of *Oplan Balik Eskwela* (OBE), Schools Readiness and Opening of Classes for S.Y. 2020-2021", the Indicator 9 of School Readiness Checklist requires school to conduct Mental Health and Psychosocial Services. In the Division Memorandum No. 371, s. 2021, titled "Convergence on *Oplan Balik Eskwela* 2021", the Indicator 10 of School Readiness Self-assessment Checklist requires school to conduct Mental Health and Psychosocial Services for students, teachers, and non-teaching personnel. In the Division Memorandum No. 434, s. 2022, titled "Monitoring of Opening of Classes, Implementation of K-12 Basic Education Curriculum, and School Governance and Operations for School Year 2022-2023", the Indicator 4 under the support mechanism of Part II of Monitoring Tool for Opening of Classes S.Y. 2022-2023 requires schools to have provision of mental

health and psychosocial support to all personnel. For the past three years, Kasiglahan Village Elementary School was conducting webinars for Mental Health and Psychosocial Services (MHPSS). However, the topics for webinars were general in nature and there were no innovative activities that address the mental health of the teachers.

Nature of Job Satisfaction, Burnout, and Stress Preventative Coping Strategy

Job satisfaction plays an essential role in the overall commitment and productivity of the school organization (Baluyos et al. 2019). Job satisfaction affects students" performance, and educational improvement, it leads towards school improvement, quality education and student satisfaction (Maqbool, 2017). Burnout is defined as a state of physical and emotional depletion resulting from conditions of work (Whitehead, 2001). It is generally conceived to be a chronic response to extreme pressures and involves emotional exhaustion, feelings of low accomplishment and a depersonalisation of others in the work context (Maslach et al., 1996). In United States, years of teaching experience is related to teacher burnout (McCarthy et al., 2009). On the other hand, gender and academic degree do not seem to relate to teachers' burnout, however, age and years of teaching experiences were related to burnout (Croom, 2003). Preventive coping strategy may be operative in decreasing the extent of burnout among teachers who are in stressful positions (Mooney, 2018).

School environment and the teaching profession are frequently demanding, teachers are mentally and physically challenged due to extensive changes in the learning environment, instructional approaches and roles as educators (Pressley, 2021). Furthermore, the study of Pressley (2021) revealed different contributing factors in the burnout of teachers, such as anxiety in using technology and providing virtual instruction, anxiety in communicating with parents, anxiety in communicating with school administrators, lack of administrative support, and COVID-19 anxiety scale.

Research Questions

The main objective of this research study was to determine the teachers' demographic profile, job satisfaction, degree of burnout, and stress preventative coping strategy. Specifically, this study aimed to answer the following questions:

1. What is the demographic profile of teachers?
    1.1 sex
    1.2 age group
    1.3 educational attainment
    1.4 teaching position
    1.5 teaching experience
2. What is the level of teachers' job satisfaction?
    2.1 work and workplace
    2.2 supervisor and management
    2.3 benefits and recognitions

3. What is the teachers' degree of burnout?
4. What is the teachers' stress preventative coping strategy?
5. Is there a significant relationship between teachers' demographic profile and their level of job satisfaction, degree of burnout, and stress preventative coping strategy?

Hypothesis

The null hypothesis that was tested in the study is: there is no significant relationship between teachers' demographic profile and their job satisfaction, degree of burnout, and stress preventative coping strategy.

METHODOLOGY

Research Design

Descriptive-correlational research design was utilized in this study. Primarily, it aimed at describing two or more variables and discovering the relationships that occur between or among them (Sousa et al., 2007). The design is used to describe the teachers' demographic profile, job satisfaction, degree of burnout, and stress preventative coping strategy. After describing the aforementioned variables, the study tested if there is significant correlation between the independent variable and the dependent variables.

Respondents or Sources of Data

The respondents of this study were one hundred thirty-nine (139) teachers from kindergarten, SPED, grades 1 to 6. The inclusion criteria for the teachers-respondents are the following: must be a permanent teacher in Kasiglahan Village Elementary School, and must voluntarily participate in answering the research questionnaire.

Sampling Technique

This research employed stratified random sampling technique to select a sample size of one hundred thirty-nine (139) teachers from the total population of two hundred fifteen (215) teachers. The teachers' grade level served as their strata. With the stratified random sampling, there is an equal chance or probability of selecting each unit from a group of the population (Etikan & Bala, 2017).

The definitive calculation for the number of respondents was obtained with the use of Raosoft online sample size calculator. To calculate the parameters, statistics was set to: alpha error of probability of 5%; confidence level (1-β error prob) of 95%; population size of 215; and a response distribution of 50%. It yielded a required sample size of 139.

Scope and Limitation

The study was conducted during the School Year 2022-2023 at Kasiglahan Village Elementary School. The scope of the study is delimited to determination of teachers' demographic profile, job satisfaction, degree of burnout, and stress preventative coping strategy, and exploring the relationship among them. The teachers' demographic profile is delimited to sex, age group, educational attainment, teaching position, and teaching experience. The dimensions of teachers' job satisfaction are delimited to: work and workplace, supervisor and management, and benefits and recognitions.

As to limitation, this research covered only one locale of the study, however, the number of teachers is in Mega category with two hundred fifteen (215) teachers. The majority of the sex of the teachers is also female.

Data Gathering Method

A survey data collection was chosen for the current study to collect quantitative data from the respondents. A survey instrument was carried out in order to address the main research questions. The use of a Likert-type scale improved the data collection process and analysis of teachers' job satisfaction, degree of burnout, and preventative coping strategy. The rationale for using a survey data collection was to generalize a population in order to make inferences about their characteristics (Creswell, 2007).

The research instrument is combination of researcher-made and standardized scale. The first part of the instrument is about the demographic profile of the teachers, the second part is the job satisfaction survey (NACCHO, 2012), the third part is the burnout inventory (Maslach et al., 1996), and the fourth part is the stress preventative coping strategy (McCarthy et al., 2014).

Data Analysis

The researcher imported the raw data to ***PSPP software***, it is an open-source application used for statistical analysis of sampled data. Several statistical formulae were used to answer the statement of the problem in this study.

To analyse the data in problem no. 1 "What is the demographic profile of teachers?" – **frequency** and **percentage** were used.

To analyse the data in problem no. 2 "What is the level of teachers' job satisfaction?", problem no. 3 "What is the teachers' degree of burnout?" and problem no. 4 "What is the teachers' stress preventative coping strategy?" – **mean,** and **standard deviation** were used.

To analyse the data in problem no. 5 "Is there a significant relationship between teachers' demographic profile and their level of job satisfaction, degree of burnout, and stress preventative coping strategy?" – **Chi-square** was used.

RESULTS AND DISCUSSION

Demographic Profile of the Teachers

Table 1.1
Sex of Teachers

Sex	Frequency (f)	Percentage (%)
Male	15	10.79
Female	124	89.21
Total	**139**	**100.0%**

The table 1.1 shows that out of one hundred thirty-nine (139) teachers, 10.79% are male (f=15) and 89.21% are female (f=124).

Table 1.2
Age Group of Teachers

Age Group	Frequency (f)	Percentage (%)
20-25	6	4.32
26-30	28	20.14
31-35	18	12.95
36-40	28	20.14
41-45	20	14.39
46-50	16	11.51
51-55	14	10.07
56-60	8	5.76
61+	1	0.72
Total	**139**	**100.0%**

As shown in table 1.2, the highest numbers of respondents are in the age groups of 26-30 years old and 36-40 years old (f=28) or 20.14%. On the other hand, lowest numbers of respondents falls under the age group of 61 years old and above (f=1) or 0.72%. The table further shows that the mainstream of the teachers are middle-aged adults.

Table 1.3
Educational Attainment of Teachers

Educational Attainment	Frequency (f)	Percentage (%)
Bachelor's Degree Graduate	57	41.01

With Units in Master's Degree	47	33.81
Master's Degree Graduate	33	23.74
Doctorate Degree Graduate	2	1.44
Total	**139**	**100.0%**

Table 1.3 reveals that the highest numbers of teachers are bachelor's degree graduate (f=57) or 41.01%. The lowest numbers of teachers are doctorate degree graduate (f=2) or 1.44%.

Table 1.4
Teaching Position of Teachers

Teaching Position	Frequency (f)	Percentage (%)
Teacher I	72	51.80
Teacher II	29	20.86
Teacher III/ SPED Teacher	38	27.34
Total	**139**	**100.0%**

It can be derived from the table 1.4 that most of the teachers' position is Teacher I (f=72) or 51.80, it was followed by Teacher III/ SPED Teacher (f=38) or 27.34%. The least of the teachers' position is Teacher II (f=29) or 20.86%.

Table 1.5
Teaching Experience of Teachers

Teaching Experience	Frequency (f)	Percentage (%)
1-5 years	28	20.14
6-10 years	43	30.94
11-15 years	24	17.27
16 or more	44	31.65
Total	**139**	**100.0%**

As indicated to table 1.5, with regards to teachers' teaching experience, 20.14% have 1-5 years teaching experience (f=28), 30.94% have 6-10 years teaching experience (f=43), 17.27% have 11-15 years teaching experience (f=24), and 31.65% have 16 or more years of teaching experience (f=44).

Level of Teachers' Job Satisfaction

Table 2.1
Teachers' Job Satisfaction in the Aspect of Work and Workplace

Teachers' Job Satisfaction in the Aspect of Work and Workplace	Mean	Standard Deviation	Verbal Interpretation
1. Our school rules and procedures are appropriate and reasonable.	4.10	0.95	Satisfied
2. I like the people I work with.	4.21	0.89	Satisfied
3. My workmates are competent.	4.30	0.88	Very Satisfied
4. I like doing the things I do at work.	4.22	0.90	Very Satisfied
5. My duties and responsibilities are achievable.	4.24	0.88	Very Satisfied
6. I have the opportunity to take part in trainings, webinars, meetings and outreach activities.	4.17	0.83	Satisfied
7. I receive the information, tools and resources I need to do my job effectively.	4.11	0.88	Satisfied
8. I know what is expected of me at work.	4.22	0.82	Very Satisfied
9. I am allowed / encouraged to make decisions to solve problems for my students.	4.29	0.74	Very Satisfied
10. I know how to measure the quality of my work.	4.27	0.76	Very Satisfied
11. The people I work with cooperate as a team.	4.29	0.78	Very Satisfied
12. I have a safe workplace.	4.18	0.79	Satisfied
13. I would not consider leaving my job.	4.11	0.96	Satisfied
14. All employees have an equal opportunity to further their education.	4.28	0.83	Very Satisfied
15. I feel my job has value to the community.	4.57	0.72	Very Satisfied
SUMMATIVE MEAN	**4.24**	**0.85**	**Very Satisfied**

Legend: **5** [4.20-5.00] Very Satisfied
4 [3.40-4.19] Satisfied
3 [2.60-3.39] Neutral
2 [1.80-2.59] Dissatisfied
1 [1.00-1.79] Very Dissatisfied

Table 2.1 shows the teachers' job satisfaction in the aspect of work and workplace. Specifically, indicator 15 (M=4.57, SD=0.72) obtained the highest mean, implying that teachers are '*very satisfied*' that their job has value to the community. Furthermore, indicator 1 (M=4.10, SD=0.95) yielded the lowest mean, which infer that the teachers are '*satisfied*' that the schools' rules and procedures are appropriate and reasonable. Meanwhile, the rest of the indicators got a mean ranging from 4.11 to 4.30.

To sum up, the teachers' job satisfaction in the aspect of work and workplace (M=4.24, SD=0.85) is verbally interpreted as '*very satisfied*'. Related to the study of Baluyos et al. (2019), they defined job satisfaction plays an essential role in the overall commitment and productivity of the school organization.

Table 2.2
Teachers' Job Satisfaction in the Aspect of Supervisor and Management

Teachers' Job Satisfaction in the Aspect of Supervisor and Management	Mean	Standard Deviation	Verbal Interpretation
16. My school has the right people and skills to do its work.	4.29	0.72	Very Satisfied
17. My school practices high standards and ethics.	4.14	0.79	Satisfied
18. My supervisor is quite competent in doing his/her job.	4.18	0.81	Satisfied
19. My supervisor shows interest in my feelings and acknowledges my concerns.	3.97	0.85	Satisfied
20. My supervisor treats me with dignity and respect.	4.02	0.84	Satisfied
21. My school consistently demonstrates support for a diverse workforce.	4.14	0.75	Satisfied
22. My supervisor holds me and my co-workers accountable for performance.	4.08	0.77	Satisfied
23. I can rely on my supervisor.	3.88	0.85	Satisfied
SUMMATIVE MEAN	**4.09**	**0.81**	**Satisfied**

Legend:
5 [4.20-5.00] Very Satisfied
4 [3.40-4.19] Satisfied
3 [2.60-3.39] Neutral
2 [1.80-2.59] Dissatisfied
1 [1.00-1.79] Very Dissatisfied

Table 2.2 discloses the teachers' job satisfaction in the aspect of supervisor and management. Indicator 16 (M=4.29, SD=0.72) got the highest mean, entailing that the teachers are '*very satisfied*' that the school has the right people and skills to do its work. Moreover, indicator 23 (M=3.88, SD=0.85) gained the lowest mean, specifying that the teachers are '*satisfied*' that they can rely on their supervisor. Meanwhile, the rest of the indicators got a mean ranging from 3.97 to 4.18. To sum up, teachers' job satisfaction on the aspect of supervisor and management (M=4.09, SD=0.85) is verbally interpreted as '*satisfied'*.

Table 2.3
Teachers' Job Satisfaction in the Aspect of Benefits and Recognitions

Teachers' Job Satisfaction in the Aspect of Benefits and Recognitions	Mean	Standard Deviation	Verbal Interpretation
24. I feel I am being paid a fair amount for the work I do.	3.73	0.89	Satisfied
25. I am satisfied with the benefits I receive.	3.71	0.87	Satisfied
26. My working hours are fair.	3.78	0.92	Satisfied
27. I feel that the work I do is appreciated.	3.91	0.80	Satisfied

28. My performance evaluation provides me with meaningful information about my performance.	4.03	0.82	Satisfied
29. My amount of vacation is enough.	3.53	0.99	Satisfied
SUMMATIVE MEAN	**3.78**	**0.90**	**Satisfied**

Legend: **5** [4.20-5.00] Very Satisfied
4 [3.40-4.19] Satisfied
3 [2.60-3.39] Neutral
2 [1.80-2.59] Dissatisfied
1 [1.00-1.79] Very Dissatisfied

Table 2.3 displays the teachers' job satisfaction in the aspect of benefits and recognitions. Indicator 28 (M=4.03, SD=0.82) garnered the highest mean, signifying that the teachers are '*satisfied*' that their performance evaluation provides them with meaningful information about their performance. Deliberately, indicator 29 (M=3.53, SD=0.99) obtained the lowest mean, denoting that the teachers are also '*satisfied*' that the amount of their vacation is enough. It is noteworthy that all the indicators obtained a verbal interpretation of '*satisfied*'. Meanwhile, the rest of the indicators got a mean ranging from 3.71 to 3.91.

To sum up, the teachers' job satisfaction in the aspect of benefits and recognitions (M=3.78, SD=0.90) is verbally interpreted as '*satisfied'*. The result of this study is supported by the findings of Maqbool (2017) because job satisfaction affects students' performance, and educational improvement.

Table 2.4
Summary Table of Teachers' Level of Job Satisfaction

Teachers' Level of Job Satisfaction	Mean	Standard Deviation	Verbal Interpretation
Work and Workplace	4.24	0.85	Very Satisfied
Supervisor and Management	4.09	0.81	Satisfied
Benefits and Recognitions	3.78	0.90	Satisfied
SUMMATIVE MEAN	**4.03**	**0.87**	**Satisfied**

Legend: **5** [4.20-5.00] Very Satisfied
4 [3.40-4.19] Satisfied
3 [2.60-3.39] Neutral
2 [1.80-2.59] Dissatisfied
1 [1.00-1.79] Very Dissatisfied

Table 2.4 outlines the summary of teachers' level of job satisfaction in the three aspects. The aspect of work and workplace (M=4.24, SD=0.85) obtained the highest mean, it was followed by the aspect of supervisor and management (M=4.09, SD=0.81). The aspect on benefits and recognitions (M=3.78, SD=0.90) yielded the lowest mean. As a conclusion, teachers' job satisfaction (M=4.03, SD=0.87) is verbally interpreted as '*satisfied'*.

Table 3
Teachers' Degree of Burnout

Teachers' Degree of Burnout	Mean	Standard Deviation	Verbal Interpretation
1. I feel emotionally exhausted because of my work	3.52	1.60	At least once a month
2. I feel worn out at the end of a working day	3.73	1.84	Several times a month
3. I feel tired as soon as I get up in the morning and see a new working day stretched out in front of me	2.77	1.70	At least once a month
4. I can easily understand the actions of my colleagues/ supervisors	5.35	1.75	Several times a week
5. I get the feeling that I treat some clients/colleagues impersonally, as if they were objects	1.88	1.54	At least a few times a year
6. Working with people the whole day is stressful for me	2.23	1.65	At least a few times a year
7. I deal with other people's problems successfully	3.55	1.81	At least once a month
8. I feel burned out because of my work	2.81	1.68	At least once a month
9. I feel that I influence other people positively through my work	5.01	1.80	Once a week
10. I have become more insensitive to people since I have started doing this job	2.14	1.69	At least a few times a year
11. I'm afraid that my work makes me emotionally harder	2.41	1.56	At least a few times a year
12. I feel full of energy	5.56	1.49	Several times a week
13. I feel frustrated by my work	2.32	1.49	At least a few times a year
14. I get the feeling that I work too hard	3.41	1.91	At least once a month
15. I'm not really interested in what is going on with many of my colleagues	2.01	1.39	At least a few times a year
16. Being in direct contact with people at work is too stressful	2.28	1.54	At least a few times a year
17. I find it easy to build a relaxed atmosphere in my working environment	4.97	1.88	Once a week
18. I feel stimulated when I been working closely with my colleagues	4.63	2.01	Once a week

19. I have achieved many rewarding objectives in my work	4.01	1.92	Several times a month
20. I feel that I'm completely puzzled, not knowing what to do.	2.52	1.50	At least a few times a year
21. In my work I am very relaxed when dealing with emotional problems	3.86	2.00	Several times a month
22. I have the feeling that my colleagues blame me for some of their problems	1.58	1.10	Never
SUMMATIVE MEAN	**3.30**	**2.07**	**At least once a month**

Legend:
7 [6.16-7.00] Every day
6 [5.30-6.15] Several times a week
5 [4.44-5.29] Once a week
4 [3.58-4.43] Several times a month
3 [2.72-3.57] At least once a month
2 [1.86-2.71] At least a few times a year
1 [1.00-1.85] Never

Table 3 reveals the teachers' degree of burnout. Indicator 12 (M=5.56, SD=1.49) obtained the highest mean, indicating that teachers felt full of energy *'several times a week'*. On the other hand, indicator 22 (M=1.58, SD=1.10) yielded the lowest mean suggesting that teachers '*never*' felt that their colleagues blame them for some of their problems. Meanwhile, the rest of the indicators got a mean ranging from 1.88 to 5.35.

As a whole, the teachers' degree of burnout (M=3.30, SD=2.07) is verbally interpreted or frequently felt '*at least once a month'*. In connection to the study of Whitehead (2001), he defined burnout as a state of physical and emotional depletion resulting from conditions of work; definitely this state must be avoided.

Teachers' Stress Preventative Coping Strategy

Table 4
Teachers' Stress Preventative Coping Strategy

Teachers' Stress Preventative Coping Strategy	Mean	Standard Deviation	Verbal Interpretation
1. I can trust my own judgments.	3.96	0.67	Agree
2. I know how to pick the right coping strategy for the right situation.	4.02	0.58	Agree
3. I know how to make social situations more comfortable.	3.99	0.64	Agree
4. I know how to think about situations in a positive way.	4.12	0.63	Agree
5. I see problems as opportunities to learn and grow.	4.25	0.70	Strongly Agree

6. When new information comes my way, I can recognize when it will be important to me.	4.08	0.65	Agree
7. I use humor to keep difficulties from becoming stressful.	3.99	0.83	Agree
8. My sense of humor keeps my stress level under control.	4.06	0.67	Agree
9. I can communicate my needs to others.	4.04	0.73	Agree
10. I can handle stressful situations.	3.96	0.72	Agree
11. I can recognize when someone is about to become unhappy with me.	3.93	0.61	Agree
12. I am able to ask for emotional support.	3.91	0.76	Agree
13. I believe the difficulties I am facing will not last forever.	4.44	0.65	Strongly Agree
14. I know how to make others feel comfortable.	4.10	0.63	Agree
15. I am able to recognize when I need to take action to avoid causing stress in my life.	4.07	0.54	Agree
16. I have others to call upon when needed.	4.14	0.71	Agree
17. I have goals that keep me focused.	4.32	0.67	Strongly Agree
18. I have mutually supportive relationships.	4.30	0.67	Strongly Agree
19. I can learn new tasks.	4.43	0.60	Strongly Agree
20. I know my own limits.	4.33	0.67	Strongly Agree
21. I am able to reduce my daily demand level by planning ahead.	4.14	0.59	Agree
22. If I fail in one situation, I know I can still succeed in other situations.	4.36	0.68	Strongly Agree
23. I know I can't be all things to all people.	4.16	0.69	Agree
24. I can adapt to change.	4.29	0.61	Strongly Agree
25. When problems come up in one area they don't affect my overall happiness.	3.96	0.74	Agree
26. I do not want to trade my life for anyone else's life.	4.14	0.82	Strongly Agree
27. I am able to prevent stress by having clear values in my life.	4.33	0.67	Strongly Agree
28. I know how to learn from my mistakes.	4.39	0.67	Strongly Agree
29. I accept my imperfections.	4.52	0.62	Strongly Agree
30. I am able to use constructive criticism.	4.16	0.69	Agree
31. I know when I need to "go with the flow" to prevent a situation from becoming stressful.	4.16	0.63	Agree

32. I can find the bright side to most situations.	4.23	0.64	Strongly Agree
SUMMATIVE MEAN	**4.16**	**0.69**	**Agree**

Legend: **5** [4.20-5.00] Strongly Agree
4 [3.40-4.19] Agree
3 [2.60-3.39] Undecided
2 [1.80-2.59] Disagree
1 [1.00-1.79] Strongly Disagree

Table 4 depicts the teachers' stress preventative coping strategy. Indicator 29 (M=4.52, SD=0.62) obtained the highest mean, indicating that teachers are *'strongly agree'* that their stress preventative coping strategy is to accept their imperfections. On the other hand, indicator 12 (M=3.91, SD=0.76) yielded the lowest mean implying that teachers are *'agree'* that their stress preventative coping strategy is to ask for emotional support. Meanwhile, the rest of the indicators got a mean ranging from 3.93 to 4.44. As a conclusion, the teachers' stress preventative coping strategy (M=4.16, SD=0.69) is verbally interpreted as '*agree'*.

Relationship between Teachers' Demographic Profile and their Level of Job Satisfaction, Degree of Burnout, and Stress Preventative Coping Strategy

Table 5
Chi-square Test Results

	sex	**age group**	**educational background**	**teaching position**	**teaching experience**
Level of Job Satisfaction	0.297	0.029 *	0.307	0.330	0.269
Degree of Burnout	0.322	0.085	0.142	0.266	0.185
Stress Preventative Coping Strategy	0.333	0.152	0.316	0.232	0.088

Legend: * - Significant at 0.05 level
** - Significant at 0.01 level

Table 5 illustrates that the teachers' age group is positively correlated to the level of job satisfaction. It means that the change in teachers' age group do significantly correlate with the increase or decrease of these indicators of Level of Job Satisfaction.

The findings of the current study is not in consonance with the study of Baluyos et al. (2019), their study revealed that teachers who are satisfied with their teaching assignments or jobs were equipped with a Masters' degree, and with an average teaching experience of nine years.

Conclusions

Based on the findings of the study, the following conclusions were drawn: 1) Out of 139 respondents majority of them were composed of female, in the age group of 26-30 years old and 36-40 years old, have bachelor's degree, holds Teacher I position, and have 16 or more years of teaching experience; 2) The teachers' job satisfaction (M=4.03, SD=0.87) is verbally interpreted as '*satisfied'*; 3) The teachers' degree of burnout (M=3.30, SD=2.07) is verbally interpreted or frequently felt '*at least once a month'*; 4) The teachers' stress preventative coping strategy (M=4.16, SD=0.69) is verbally interpreted as '*agree'*; and 5) Teachers' age group is positively correlated to the level of job satisfaction.

Recommendations

Grounded on the results and discussions, the following recommendations are hereby offered: a) The school environment should build a culture that displays the amount of gratification and promote social and emotional competency to all the employees. Capitalize intangible factors like communication, boosting confidence, respect for self and others, optimism and hope, trust, problem-solving and coping skills, and sense of purpose and meaning; b) To prevent the teachers' burnout, schools should keep track on teachers' well-being and offer instructional, physical, mental, spiritual and emotional support throughout the school year; c) Schools should make meaningful partnership with mental health experts like guidance counsellors or behaviour support specialists to ensure that teachers get the awareness and help they need; d) School heads should include the job satisfaction, degree of burnout, and stress preventative coping strategy in Learning Circle Sessions or In-Service Training, so teachers will improve their understanding of mental health conditions and escalate access to various healthcare; e) For further research, it is recommended to do a longitudinal study about the effects of Mental Health and Psychosocial to teachers' performance; and f) Future researchers may do similar studies emphasizing the direct effect of teachers' level of job satisfaction, degree of burnout, and stress preventative coping strategy to students' academic performance.

Dissemination and Advocacy Plans

Schools may adapt the proposed project entitled E.M.B.R.A.C.E. (**E**mpowering **M**ental Health and Psychosocial Services **B**y **R**aising **A**wareness and **C**onducting **E**vidence-based activities). The main objective of this dissemination, utilization, and advocacy strategy is to raise awareness about Mental Health and Psychosocial Supports and Services through conducting webinars and evidence-based activities.

Compliance with Ethical Standards

To address the possible ethical concerns that could emanate from the conduct of the research and discussions, the researcher furnished a permit to conduct the study from the School Head of Kasiglahan Village Elementary School. The researcher also presented the research proposal and findings to the Master Teachers and School Head for cross checking of the data. The researcher also secured a free prior and informed consent from the respondents of the study, and made sure that the data they had provided will be treated with utmost confidentiality and anonymity. The researcher presented the authentic research findings without any falsification and fabrication.

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TEACHERS' LIVED EXPERIENCES IN TEACHING SCIENCE DURING THE PANDEMIC

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ABSTRACT

This qualitative study explored the lived experiences of elementary school teachers in teaching Science during the COVID-19 pandemic. The participants of this research were the teachers from Bayawan City schools adopting modular learning modality, whose ages range from 39 to 59 years old, and whose length of teaching experience ranges from 16 to 36 years. Data were collected by means of recorded interviews and were analyzed using Colaizzi's Method. Key findings revealed four (4) emergent themes representing the science teachers' lived experiences. The themes cover the various teaching constraints and challenges, teacher interventions, and sense of accomplishment experienced by the teachers during the pandemic. Data revealed that the participants faced major changes in terms of science teaching instruction and strategies to adapt to the shift to modular learning modality and the hindrances to interaction, communication, and experimentation due to home learning setup. The teachers also experienced changes in terms of extended work hours, additional work functions, concerns on student output completion and submission, and compromise in academic integrity. Parental involvement was identified as a significant factor in the teaching-learning process during the pandemic. Teachers also expressed relatively good perceptions of teaching effectiveness and satisfaction. Recommendations were provided to improve the current teaching conditions of teachers and learning conditions of students under the modular learning modality.

Keywords: *lived experience, science teachers, modular learning modality, Philippines, COVID-19 pandemic*

INTRODUCTION

The COVID-19 outbreak has been adversely affecting all segments of the population, particularly those individuals in the most vulnerable social groups such as those living in poverty, the elderly, people with disabilities, the youth, and the indigenous peoples (United Nations Department of Economic and Social Affairs, 2020). Certainly, it has also affected the educational sector. Education around the world has changed tremendously as a result of the global pandemic (Li & Lalani, 2020).Many countries have closed schools, colleges, and universities in 2020 to reduce the risk of spreading the viral infection, thereby altering people's attitudes, relationships, and lifestyles (Simbulan, 2020).

In the Philippines, the Department of Education (DepEd) has issued DepEd Order No. 012, Series of 2020, establishing the Basic Education Learning Continuity Plan (BE-LCP), a bundle of education interventions designed to address the educational problems posed by COVID-19. The BELCP was developed to safeguard the health and safety of pupils, teachers, and workers and to provide learning continuity during the pandemic through curricular changes, the structuring of learning materials, and the use of numerous sources of information. This change in the modality of lesson delivery resulted in many struggles in terms of implementation.

A study by Dangle and Sumaoang (2020) identified that secondary level teachers have encountered challenges such as the lack of school funds for module design and distribution, pupils' struggles with self-study, and parents' inability to intellectually manage their child/children. Nonetheless, teachers have looked for strategies to undertake remote modes of teaching since mobility in delivering instruction to pupils has been limited. Also, secondary level teachers in the Philippines, especially in teaching Science using the distance learning modality, have familiarized themselves with the different learning platforms to develop professional skills necessary for the effective implementation of the learning modality. Moreover, they have upgraded their equipment, identified teaching methodologies that can be applied in learning, and conducted tests by incorporating more practical questions (Arrieta et al., 2020).

The researcher of the current study believes in the necessity to look deeper into what teachers have gone through during these times of the pandemic especially that there are only limited studies that explored on unique teacher experiences amidst Covid-19, particularly the experiences of elementary science teachers in public schools. Hence, the purpose of this study is to investigate, acknowledge, and identify the various lived experiences of the indicated group of educators in the context of modular learning modality.

Furthermore, this undertaking is deemed as a means to gather baseline data on the challenges faced by teachers while promoting continuity of education during these

trying times, which will also aid in the development of more effective teaching methodologies and academic strategies for future use.

Research Questions

The research study aims to explore the lived experiences of the teachers as to their teaching of the Science subject during the pandemic. The grand question that this study intends to answer is:

"What are the lived experiences of teachers in terms of teaching Science during the pandemic?"

METHODOLOGY

The study utilized a phenomenological research design, a qualitative research method that is used to describe how humans experience a certain phenomenon (Creswell, 2013). Phenomenology, as a qualitative method, asks a different question to further explicate the meaning of the phenomenon (Guillbeau, 2014). The phenomenological design allowed the researcher to use texts to make sense of the phenomenon which, in the case of the study, are the lived experiences of science teachers in delivering instruction during the pandemic.

This research design attempts to search for the essential meaning of the teachers' experiences and identify some congruent themes and underlying structure to the experiences (Maxwell, 2012). As determined in an investigation on qualitative studies, particularly phenomenological research, the participants are chosen through criterion purposive sampling. Criterion purposive sampling is a non-random technique that utilizes identified participants that meet a defined, predetermined criterion (Palinkas et al., 2015; Moser & Korstjens, 2017). In phenomenology, the researcher shall select individuals that can purposefully form an understanding of the research problem and the central phenomenon under study (Creswell, 2013).

For this inquiry, these criteria are considered in selecting the research participants: (a) elementary school teachers handling Science subjects; (b) must be active in service during the learning continuity effective amidst the COVID-19 pandemic; (c) aged 39 years old and above; and (d) whose length of teaching experience is over 15 years. Through these qualifications, 8 Science teachers from public elementary schools under the Division of Bayawan City were identified. To confirm data saturation, 2 participants were interviewed but their responses were not included in the presentation.

This study was conducted in the respective homes of the participants or in the mutually agreed place by both the participants and the researcher. The participants have

been teaching in the public elementary schools of the Division of Bayawan City, namely, Bayawan City East Central School and Banga Elementary School. Methodically evaluating qualitative data would result in the development of emergent themes and patterns. Data analysis typically entails breaking down data into smaller units, coding and naming the units based on the content they represent, and grouping coded materials based on Fourth, formulated meanings were shared concepts (Polit & Beck, 2013).

In this study, Colaizzi's Phenomenological Method, which is deemed appropriate for content analysis, was employed. Beck and Watson (2008) maintained that Colaizzi's method achieves objectivity in data analysis and takes into account its fidelity to phenomena and that it entails a respectful listening to what the phenomenon speaks of itself, rather than telling what it is. The steps involved in this method are as follows:

First, the researcher recorded all interviews and transcribed the information verbatim. Listening to the recorded files is important because it creates a sense of connection, and reading the transcripts repeatedly allows the researcher to develop a sense of meaning for each transcript. Therefore, the researcher must be trained in taking notes to aid in reflexive practice while listening, reading, and rereading (Tessier, 2012; Sanders, 2003).

Second, significant statements or phrases relating directly to the research phenomenon were extracted from the transcripts of the participants. To identify important statements in the transcripts that truly tell the lived experiences of the study participants, careful analysis of the statements in the transcript is required. It has been established that manual transcription and analysis would allow for continued immersion in the data, and whatever thoughts and feelings arise during this stage would be recorded in the reflexive diary and be later used to describe some interpretative decisions (Praveena, 2021; Sanders, 2003).

Third, formulatedmeanings were constructed from the significant statements. Cornelia (2012) stated that the formulated meanings should accurately reflect the intent of each statement. This necessitates a comparison of the original transcript, significant statements, and formulated meanings generated by all participants. The third stage now demands conscientious reflexivity that acknowledges any presuppositions in order to avoid misinterpretation of the participants' perspectives.

Fourth, formulated meanings wereorganized into theme clusters, which will evolve into emergent themes. To accurately reflect the meaning of the experiences, these themes are constantly checked and refined against the original transcripts. This requires multiple rounds of cross-referencing.

Fifth, the results were incorporated into a rich and exhaustive description of the lived experiences of Science teachers while teaching during the COVID 19 pandemic. According to Denzin and Lincoln (2017), detail, context, emotion, and the webs of social relationships that connect persons to one another, as well as the voices, feelings, actions, and meanings of interacting individuals, should all be included in an exhaustive

description that goes beyond facts and appearances. Furthermore, it is suggested that this is rechecked by the research adviser for feedback and accuracy.

Sixth, which is the most important stage, involves getting validation from the people who took part in the study as regards the exhaustive description of their experiences. This requires returning to the participants for confirmation and possible follow-up interview to ensure that the recorded statements accurately reflected their experiences. Their remarks will be meticulously documented.

Lastly, the researcher incorporated any new or pertinent data obtained from the participants' validation and used it to achieve congruence with the participants' lived experience.

The seven steps, along with a continuous review and verification procedure, were meticulously followed by the researcher to ensure that the findings accurately reflect the Science teachers' experiences during the pandemic.

RESULTS

To assure the credibility, consistency, and trustworthiness of the data collection and analysis, the rigor of the study was done through: (a) active listening during the conduct of the interview, (b) careful coding to obtain rich and comprehensive data; (c) audio recording interviews for transcription; (d) audit trail; (e) doing reflexive journaling; and (f) conclusion with experts or advisers.

It is good to note that the proponent is a science teacher belonging to the same schools' division, which is Bayawan City Division, as with the participants. Some of the participants are known to the researcher. However, to mitigate the influence of personal biases and preconceived notions, the researcher made sure to keep cognizant of this possible occurrence.

The main role of the researcher during the interview was to facilitate the flow of thoughts and ideas, and to collect substantive information on the different narratives expressed by the participants with the use of prompts and points of clarification. Aside from having an audio recording of the interview, non-verbal cues were logged through journaling.

Coding was done during the analysis and interviews. This ensured that the information that was collected during the individual interviews was kept confidential. The participants were aware that their involvement and their inputs were to be treated with utmost confidentiality and that their identities were to be kept unidentified all throughout course of the study.

The participants were also asked to sign the informed consent forms before the conduct of interviews. Open-ended questions were primarily used during the interview

proper. All questions were asked in English, but the participants were given the liberty to speak in the vernacular so that they could freely express their ideas and thoughts.

After a thorough analysis of the transcripts and coding, the researcher identified the following 4 emergent themes with twelve clustered themes capturing the lived experiences of the Science teachers during the pandemic:

Emergent Theme 1: Constraints Teaching to Effective Modular Teaching
Theme 1: Pupil Preparedness and Instructional Constraints
Theme 2: Teaching Techniques Modifications
Theme 3: Pupil's Learning Conditions
Theme 4: Parental Involvement

Emergent Theme 2: Challenges in Pandemic Teaching
Theme 5: Planning and Preparation
Theme 6: Completion of Learning Outputs
Theme 7: Compromised Academic Integrity

Emergent Theme 3: Teacher Interventions
Theme 8: Parent-Teacher Dialogue
Theme 9: Alternative Learning/Teaching Methods at Home
Theme 10: Module/Instruction Modification

Emergent Theme 4: Sense of Accomplishment
Theme 11: Pupil Output Quality
Theme 12: Perception on Teaching Effectiveness

Figure 2. Emergent and Clustered Themes on the Lived Experience

This study explored the lived experiences of science teachers while teaching during the pandemic. It sought to answer the questions: (1) What are the lived experiences of the teachers in teaching Science during the pandemic? (2) How do the teachers describe their experiences during the pandemic?

Eight participants were interviewed using open-ended questions. After a thorough analysis of the transcripts, four emergent themes emerged along with twelve clustered themes. The twelve clustered themes are as follows:

Pupil Preparedness and Instructional Limitations. The ability of science teachers to teach science during the pandemic is affected by the physical distance resulting in the difficulty in establishing constant communication and the absence of interaction between pupils and teacher. This further led to instructional limitations as instructions are usually written and the chance to distribution of the self-learning modules, explain it more thoroughly is limited. The unpreparedness of the pupils for modular learning as well as their lack of reading comprehension affects the accomplishment of modules.

Teaching Techniques Limitations. Many of the participants made mention of their inability to utilize teaching strategies in the modular learning modality that were deemed to be effective during the face-to-face setup. Experimentation, one of the main strategies to achieve learning competencies in science teaching, has been modified due to the inaccessibility of the school laboratories and lab equipment/materials. The teachers have adopted measures that allowed pupils to perform experiments requiring materials that were readily accessible to them at home.

Pupil's Learning Conditions. The demand for supplementary equipment like gadgets has become more prevalent in the modular learning modality. Cellphones have become a necessity as these allow instant communication with teachers and access to vital information and supplementary learning resources like videos. The participants have revealed the learning limitations and restrictions of pupils during the pandemic given the fact that there are pupils who have no access to the internet and technology.

Parental Involvement. One of the major players in the context of pandemic learning is the parents. The extent of learning of the pupil is contingent to the parent's proactiveness and willingness to guide and carry out necessary interventions at home to help ease the understanding of the learners especially in understanding abstract concepts or ideas. The participants mentioned that the educational attainment of the parents has an influence on the quality of the outputs of the pupils.

Planning and Preparation. The participants shared how the pandemic has contributed to the extension of their functions to facilitate learning. These functions include reproduction, sorting, and preparation for worksheets, and answer sheets. This scenario gave rise to issues on time management and overall performance of teachers.

Completion of Learning Outputs. Among the major concerns disclosed by the participants in terms of pupils' performance during the pandemic is the learners' failure to comply with all the outputs and completely answer the worksheets given to them. This goes back to the parents' extent of participation in motivating their children to comply with the requirements and accomplish all work loads.

Compromised Academic Integrity. Some participants have exposed certain profound breaches of academic integrity in terms of the completion and fulfillment of modules. The participants have observed that the accomplishment of the modules is no longer done by the pupils but by their parents or guardians. It could be noted that teachers have exhibited tolerance to this practice of dishonesty and tend to be considerate due to the inopportune circumstances brought by the pandemic.

Parent-Teacher Dialogue. Majority of the participants talked about the implications of having a good established line of communication between parents and teachers. These communication venues also allow the teachers to recognize the efforts of the parents and somehow motivate them to continue their active involvement in their children's education. Participants also observed that the parents have shown initiative to have one-on-one discussions about the lessons to capacitate themselves (the parents)

in assisting their children at home. This effort resulted in a more effective means of ushering learning and creating better quality outputs.

Alternative Learning/Teaching Methods at Home. This is one of the major interventions made by science teachers to supplement the modules provided. The participants have revealed their propensity to use online sources and videos to facilitate learning. They send the videos or the links to the pupils or parents via online messaging applications. The use of the internet has been seen as game-changer for those pupils who have access to it. Unfortunately, not all pupils enjoy the same access to technology and the internet.

Module/Instruction Modification. Pupils were found to have a hard time comprehending their modules due to the sudden shift in the medium of instruction during their 4th grade from Mother Tongue to English as the main medium of instruction, which is also utilized in the science modules and course books. The participants talked about their initiative to translate the English instructions in modules to the vernacular. They wanted the pupils to still be able to work on their module in case no adults are around to assist them at home.

Pupil Output Quality. This is the first of the two standards for measuring the teachers' sense of accomplishment. The participants utilized the quality of the pupil's output as basis for their (the teachers') level of satisfaction. However, the teachers admitted that they have adjusted their expectations for the pupils given the circumstances of the pandemic. This may have in turn allowed them to feel satisfied with the simple things like pupils' completion of the tasks although the teachers did not specifically describe the quality of the pupils' outputs.

Perception on Teaching Effectiveness. Generally, the teachers show satisfactory self assessment of their effectiveness as a teacher in the midst of the pandemic. As far as teaching effectiveness is concerned, the participants in general graded themselves with a score of 75-80% out of 100% and argued that they could have done better if the circumstances were different. In other words, the participants have a realistic view of their performance. This perception is reflective of their current situations and is influenced by their sense of self-worth.

DISCUSSION

As a science teacher myself, I realized that my battles and circumstances in terms of teaching during this pandemic are one and the same with other science teachers. This realization emboldens me to improve and do better as a teacher. I have also found inspiration in the narratives of the participants as I heard and saw my fellow teachers' level of commitment, passion, and vigor, and their devotion to the teaching profession. Moreover, I felt driven to go out and beyond my comfort zone, to take courage, and to be more steadfast as I overcome whatever lies in the future.

Conclusions

In the light of obtained findings, the researcher concludes that:

First, the participants experienced major changes in their teaching strategies during the pandemic given the circumstances brought by the new modular learning modality. Considering the hindrances in interaction, communication, and learning conditions of the pupils at home, the participants had to make adjustments in the learning instruction. They had to compromise in terms of teaching strategies to accommodate the learners' needs and learning environment at home.

Second, the challenges experienced by the science teacher in terms of teaching conditions include extended working hours, additional work functions, concerns on pupils' output completion and submission, and compromise in academic integrity.

Third, the participants applied various approaches to mitigate the unfavorable conditions in education during the pandemic. They established strong parent-teacher dialogues, provided alternative learning/teaching approaches, and modified the learning materials to cater to the current needs of the pupils.

Fourth, the participants somehow felt a sense of fulfillment and satisfaction with their pupil's output and completion of the modules.

Finally, the science teachers had a realistic perception of their own teaching effectiveness taking into consideration the restrictions and the unique circumstances brought by distance learning during the pandemic.

Recommendations

Based on the findings and conclusions of this qualitative recommended: inquiry, the following are:

1. The Division of Bayawan City may implement the DepEd Order 32 s. 2020 Guideline on the Engagement of Services of Learning Support Aides to Reinforce the Implementation of the Basic Education Learning Continuity Plan in Time of COVID19 Pandemic.

2. Education Program Supervisors, particularly in the field of science, may encourage the development of laboratory experiments that are feasible and achievable for learners at home.

3. The Department of Education may provide more learning resources for the pupils especially in terms of access to technology and the internet.

4. Schools may strengthen and empower the Parent-Teacher Association to accommodate and resolve issues relevant to modular distance modality.

5. The school heads should be encouraged to conduct an analysis of the immediate needs of the teachers and address the issue on compromise in academic integrity observed by teachers.

6. Teachers may conduct capacity-building activities to parents or include sessions where parents learn from teachers during PTA meetings.

7. Teachers may be encouraged to participate in activities that help improve their self worth, health, and self-confidence.

8. Parents need to be proactive in dealing with the needs of their children at home especially in terms of complying with school requirements and improving the pupils' learning environment/conditions at home.

Compliance with Ethical Standards

Since the study is phenomenological in nature, the interview process used guide questions to extract significant statements from the participants. Voluntary participation, informed consent, anonymity and confidentiality, and the dissemination of the risks and benefits of the study were observed in the conduct of the study.

A formal letter was given to the prospective participant indicating a brief introduction of the study and the significance of his or her participation. Target participants were also informed that they could withdraw their participation at any time. The letter also mentioned that the participants would remain anonymous in the study and would be called only through pseudonyms, and that their personal information would be utilized solely in the research.

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TEACHERS' TEACHING PROFICIENCY AND GRADE 7 LEARNER'S ACADEMIC PERFORMANCE IN THE KEY LEARNING AREAS IN THE 4th CONGRESSIONAL DISTRICT OF QUEZON PROVINCE: BASIS FOR TEACHERS' CONTINUING PROFESSIONAL DEVELOPMENT PLAN

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ABSTRACT

This study aimed to assess the teacher's teaching proficiency of the public secondary school and the grade 7 learner's academic performance in the 4th Congressional District of Quezon Province. A descriptive-correlational research design was employed to collect data using a survey questionnaire as the primary instrument. The study included school head and public secondary school teachers from the aforementioned district as respondents, selected through random sampling. The study utilized the mean to describe the level of teachers' teaching proficiency, including communication and interpersonal skills, organization and planning, classroom management, assessment and coaching, collaboration and teamwork, and flexibility and adaptability. Additionally, the mean was used to describe the grade 7 learner's academic performance in English, Mathematics, and Science. Pearson's correlation coefficient (r) was employed to determine any significant relationships between teachers' teaching proficiency and grade 7 learners' academic performance. The primary research question focused on assessing teachers' teaching proficiency and grade 7 learners' academic performance in the 4th Congressional District of Quezon Province. The null hypothesis, suggesting no relationship between teachers' teaching proficiency and grade 7 learners' academic performance, was rejected based on the study's findings. Based on this finding, the researcher proposed a Teacher's Continuing Professional Development Plan. As a result of this study, several recommendations are proposed: Establish a robust monitoring and evaluation system to continually assess teachers' teaching proficiency and the grade 7 learner's academic performance in the district, allocate resources to develop

comprehensive teacher training programs that target the enhancement of teaching proficiency, subject knowledge updates, and pedagogical skill development, ensure accessibility of these programs to teachers within the 4th Congressional District of Quezon Province, promote regular team meetings among teachers for sharing best practices, addressing challenges, and brainstorming innovative teaching strategies, encourage cross-grade and cross-subject collaborations to foster interdisciplinary learning and a sense of unity among teaching staff, allocate resources and time for teachers' professional development activities, offer financial assistance for attending relevant conferences or facilitate in-house training sessions conducted by field experts, encourage knowledge-sharing among teachers through peer-to-peer training sessions and suggest that future researchers investigating teacher proficiency utilize the same instrument employed in this study, thus ensuring consistency and comparability of findings.

Keywords: *Teaching Proficiency, Academic Performance*

INTRODUCTION

The Philippines' poor performance in the 2018 Programme for International Student Assessment (PISA) has underscored the urgent need for educational reform. Despite the introduction of the Enhanced Basic Education Act of 2013, persistent challenges persist within the nation's educational landscape. As the Philippine educational system transitions towards a curriculum tailored to 21st-century learning, emphasis is placed on fostering communication skills, higher-order thinking, and problem-solving abilities among learners.

In navigating these evolving educational demands, competence, as defined by Varvel (2013), emerges as a pivotal factor. This blend of knowledge, skills, attitudes, and abilities is essential for educators striving to meet the needs of contemporary education. However, a significant obstacle lies in the insufficient training of educators in essential instructional communication skills, as highlighted by Maragha (2024).

DepEd Order No. 8 (s. 2015) underscores the critical role of classroom assessment in the K to 12 Basic Education Program, drawing upon Vygotsky's zone of proximal development. Despite this directive, many teachers in the Philippines tend to favor mechanistic assessment processes over embracing formative assessment as a pedagogical strategy. To address this, research has identified varying levels of teacher proficiency in formative assessment, offering a structured pathway for professional development aligned with educational objectives.

Moreover, recent studies have explored the relationship between teacher competence and 21st-century skills. By examining the influence of each dimension on teacher competence, these studies provide insights into predictive factors in 21st-century teachers' skills in teaching. For instance, a study involving 242 secondary school teachers in Peninsular Malaysia reveals a robust and positive relationship between professional competence and 21st-century skills. The dimensions of teacher competence, including

personal characteristics, pedagogy, professional development, information and communication technology (ICT) skills, as well as school management and development, contribute significantly to 21st-century skills.

These findings are aligned with the broader advocacy to promote academic excellence and quality education, particularly within the Schools Division of Quezon Province. By recognizing and addressing teaching skills, this initiative aims to enhance educational outcomes and foster academic success in the Philippines.

Research Questions

The purpose of this study was to establish a baseline for the teachers' continuing professional development plan by relating the teachers' teaching proficiency to the grade 7 learner's academic performance in the 4th Congressional District of Quezon Province.

Specifically, this study seeks to answer the following subproblems:

1. What is the level of the teachers' teaching proficiency in terms of the following domains?
    1.1. Communication and Interpersonal Skills
    1.2. Organization and Planning
    1.3. Classroom Management
    1.4. Assessment and Coaching
    1.5. Collaboration and Teamwork
    1.6. Flexibility and Adaptability
2. What is the level of grade 7 learner's academic performance in the following key learning areas?
    2.1. English
    2.2. Mathematics
    2.3. Science
3. Is there a significant relationship in the grade 7 learner's academic performance in the following key learning areas?
    3.1. English
    3.2 Mathematics
    2.3. Science
4. Is there a significant relationship between the level of the teachers' teaching proficiency and the grade 7 learner's academic performance in the key learning areas?
    4.1. Communication and Interpersonal Skills
    4.2. Organization and Planning
    4.3. Classroom Management
    4.4. Assessment and Coaching
    4.5. Collaboration and Teamwork
    4.6. Flexibility and Adaptability
5. What Teachers' Continuing Professional Development Plan could be made from the results of the study?

METHODOLOGY

Research Design

This study used a descriptive research design in order to determine the level of teachers' teaching proficiency and grade 7 learner's academic performance in the public secondary high schools in the 4th Congressional District of Quezon Province for the School Year 2022 – 2023, as input for the Proposed Teachers' Continuing Professional Development Plan. In addition, the descriptive-correlational research method was utilized in the study. To ascertain the connection between teacher's teaching proficiency and learner's academic performance. A quantitative approach was used to quantify data and generalize results from a sample population of interest. Structured information was formulated through the questionnaire for analysis and interpretation.

Research Locale

This study was conducted in the public secondary high schools in the 4th Congressional District of Quezon. The district consists of municipalities in the Tayabas Isthmus and Alabat Island, namely Alabat, Atimonan, Calauag, Guinayangan, Gumaca, Lopez, Perez, Plaridel, Quezon and Tagkawayan.

A questionnaire was given to the respondents, and the researcher will also collect data on how the grade 7 learners performed in the 1st and 2nd quarters of the School Year 2022 - 2023 in the subject of English, Mathematics, and Science 2022 – 2023. The 4th Congressional District in the Province of Quezon was chosen by the researcher due to a strategic combination of professional alignment and a dedication to community engagement. First off, the researcher's current position with the district guarantees direct access to local networks, insights, and potentially useful data sources, which promotes a more complex comprehension of the state of education. This familiarity can make the research study more thorough and contextually successful.

Moreover, the researcher's desire to contribute to the community and support fellow teachers adds a commendable dimension to the research endeavor. By conducting the study in a location where they are already employed, the researcher aims not only to advance academic knowledge but also to directly impact and enhance the educational experiences of colleagues. This dual purpose of contributing to both academia and the immediate professional community reinforces the relevance and potential positive outcomes of the research. The unique combination of professional proximity and a commitment to community welfare makes the 4th Congressional District of Quezon Province, an apt and meaningful choice for the research focus.

Research Population and Sample

Random sampling was utilized in this study to determine the number of respondents and the availability of the respondents in this study.

The following are the numbers of research respondents in this study.

Table No. 1. Distribution of Respondents from 4th Congressional District of Quezon Province

District	Name of School	School Size	Number of Respondents			
			School Head	Co-Teachers	Teachers	Total
Alabat	Alabat National High School	Large	1	3	3	7
	RT Camacho Integrated School	Medium	1	3	3	7
Atimonan	Atimonan National Comprehensive High School	Large	1	3	3	7
	Malinao Integrated National High School	Medium	1	3	3	7
	San Rafael National High School	Small	1	3	3	7
Calauag	Calauag National High School	Large	1	3	3	7
	Lagay National High School	Medium	1	3	3	7
	Apad National High School	Small	1	3	3	7
Guinayangan	Guinayangan National High School	Large	1	3	3	7
	Nabangka National High School	Medium	1	3	3	7
	Sta. Cruz National High School	Small	1	3	3	7
Gumaca	Gumaca National High School	Large	1	3	3	7
	Panikihan National High School	Medium	1	3	3	7
	Villa Perez National High School	Small	1	3	3	7

Lopez	Lopez National Comprehensive High School	Large	1	3	3	7
	Magallanes National High School	Medium	1	3	3	7
	Pamampangin National High School	Small	1	3	3	7
Perez	Perez National High School	Large	1	3	3	7
	Severo Tejada Integrated School	Medium	1	3	3	7
Plaridel	Concepcion National High School	Large	1	3	3	7
Quezon	Ceasar Tan Memorial National High School	Large	1	3	3	7
	Cometa National High School	Medium	1	3	3	7
	Pablo D. Maningas National High School	Small	1	3	3	7
Tagkawayan	Tagkawayan National High School	Large	1	3	3	7
	Bagong Silang National High School	Medium	1	3	3	7
	Kinatakutan National High School	Small	1	3	3	7
Total			26	78	78	182

Data Gathering Procedure

The following procedures were used in gathering data relative to the conduct of the study. For the research process, the following procedures were undertaken. the researcher secured permission from the different persons in authority to allow the researcher to conduct the study. The researcher sent letters to Schools Division Superintendent and public secondary school principals. As soon as the request was

approved, the researcher sent the Google Link to every school to fill out the data in the instruments. Upon retrieval, the researcher will review each instrument to ensure all the items are properly answered. Then the data were tallied, computed, analyzed, and interpreted.

Statistical Treatment of Data

After administering and retrieving the accomplished questionnaire, data was categorized, organized, and statistically treated using the following statistical tools:

To interpret the weighted mean of questions 1 and 2, the following continuum was used:

Assigned Value	Scale Range	Qualitative Description	Code
4	3.25 – 4.00	Highly Proficient	HP
3	2.50 – 3.24	Proficient	P
2	1.75 – 2.49	Basic	B
1	1.00 – 1.75	Below Basic	BB

Pearson's Product Moment of Correlation was used to resolve sub-problem 3 and 4.

The following continuum was used to interpret Pearson's Product Moment of Correlation results:

Size of Correlation:

Size of Correlation	Interpretation
±1.00	Perfectly positive/ negative correlation
±0.90 – 0.99	Very high positive/ negative correlation
±0.70 – 0.89	High positive/ negative correlation
±0.50 – 0.69	Moderately positive/ negative correlation
±0.30 – 0.49	Low positive/ negative correlation
±0.01 – 0.29	Negligible correlation
0.00	No correlation at all

The following scale and corresponding description were used to interpret the performance of the grade 7 learners:

Grading Scale	Description
90-100 %	Outstanding

85-89 %	Very Satisfactory
80-84 %	Satisfactory
75-79 %	Fairly Satisfactory
75 % below	Did Not Meet Expectations

RESULTS AND DISCUSSION

Part I. Level of Teachers' Teaching Proficiency

Table 2. Teachers' Teaching Proficiency Overall Mean Ratings for Communication and Interpersonal Skills.

Rater	Mean (*M*)	Std. Deviation (*SD*)	Qualitative Description
Principal	3.08	0.29	Proficient
Co-Teacher	3.07	0.25	Proficient
Teacher (self)	3.11	0.40	Proficient
Overall	**3.09**	**0.31**	**Proficient**

Table 2 provides an overview of the mean distribution of teachers' teaching proficiency in communication and interpersonal skills, with all respondents self-reporting as 'Proficient.' The results shed light on both strengths and areas for improvement. Notably, the highest mean score of 3.18 is attributed to the indicator "Builds strong interpersonal relationships with other people." This suggests that the teacher excels in fostering positive connections and relationships within the educational environment.

Conversely, the lowest mean score of 2.99 is associated with the indicator "Seeks out and listens to others who have contrary opinions." This indicates a potential area for enhancement, suggesting that the teacher could focus on actively seeking diverse viewpoints and listening attentively to individuals with differing opinions.

The ratings from self-assessment, principal evaluation, and co-teacher feedback consistently fall within the 'Proficient' range. This alignment in perceptions signifies a shared understanding of the teachers' proficiency among different stakeholders.

In summary, these findings provide valuable insights for professional development. The teacher can capitalize on their strength in building interpersonal relationships while dedicating efforts to improve the skill of actively seeking and listening to diverse opinions. Collaborative efforts involving self-reflection, guidance from the principal, and insights

from co-teachers can contribute to a holistic approach for continuous improvement in communication and interpersonal skills.

The study Xie and Derakhshan (2021) and Hargie (2021) contribute insights into the predictive nature of teacher-learner relationships in shaping emotions, stressing the relevance of interpersonal communication skills for teaching success. Stamatis (2013) further highlights the importance of teachers' associations in enhancing their work through communication, acknowledging the role of personality and willingness to learn. These studies collectively underscore the crucial role of communication in fostering positive relationships and supporting informed decision-making in the educational setting.

Table 3. Teachers' Teaching Proficiency Overall Mean Ratings in Terms of Organization and Planning

Rater	Mean (*M*)	Std. Deviation (*SD*)	Qualitative Description
Principal	3.08	0.29	Proficient
Co-Teacher	3.07	0.25	Proficient
Teacher (self)	3.11	0.40	Proficient
Overall	**3.09**	**0.31**	**Proficient**

Table 3 presents the teachers' organizational and planning proficiency, considering self-assessment, principal's ratings, and co-teacher feedback. Notably, the teacher exhibits a commendable proficiency in making decisions on time, with all evaluations converging on a highly proficient mean of 3.25. This reflects a strong ability to navigate time constraints effectively. Additionally, the teachers' knack for anticipating negative and positive consequences is a standout strength, garnering a highly proficient mean of 3.48, especially highlighted by the principal's rating.

However, areas for improvement are identified, particularly in the competency of monitoring information for on-going projects and prioritizing tasks. While proficient, these proficiencies could benefit from focused attention and potential professional development initiatives.

Furthermore, the teachers' obtaining and using relevant information to identify problems, knowing when expert knowledge is needed, and developing efficient plans and schedules is acknowledged, with mean scores in the proficient range. Collaboratively, the teacher demonstrates proficiency in organizing individuals around tasks, indicating a potential for effective collaborative planning.

The findings of the study highlight a balanced perspective on teachers' organizational and planning skills, emphasizing the importance of recognizing and affirming these proficiencies. This acknowledgment not only serves to affirm strengths but also provides a strategic roadmap for targeted professional development, ensuring continuous growth and effectiveness in organizational and planning capacities.

In relation to these findings, Ambag's study (2015) aligns with the emphasis on planning and assessment outlined in the summary. Ambag describes a process involving planning, assessing, and reporting learner's outcomes. This process emphasizes the alignment of assessment and planning activities to ensure appropriate teaching-learning activities based on learner's current knowledge and learning levels. The integration of formative assessment procedures into teaching activities, along with hands-on experiences for learners, supports the development of creativity and innovation in alternative teaching approaches. Ambag's insights reinforce the importance of intentional planning and assessment, contributing to the overall enhancement of organizational and planning skills among educators.

Table 4. Teachers' Teaching Proficiency Overall Mean Ratings in Terms of Classroom Management

Rater	Mean (*M*)	Std. Deviation (*SD*)	Qualitative Description
Principal	3.05	0.11	Proficient
Co-Teacher	3.06	0.17	Proficient
Teacher (self)	3.24	0.43	Proficient
Overall	**3.12**	**0.24**	**Proficient**

Table 4 presents the teachers' classroom management proficiency, reflecting self-assessment, principal evaluations, and co-teacher perspectives. The teacher demonstrates proficiency in encouraging learner expression and discussions, earning a highly proficient mean of 3.24. This aligns with a collaborative learning approach, as indicated by the mean of 3.27, showcasing effective learning management to promote teamwork among learners. Notably, the teachers' adeptness in creating a physical environment conducive to learning, with a highly proficient mean of 3.26, is recognized across evaluations.

In terms of classroom structure management, a highly proficient mean of 3.31 is reported, although the principal's rating slightly differs, suggesting a potential area for communication and clarification. The teacher excels in providing activities for joyful learning, focusing on real and lively practice, and allowing learners to choose activities based on their interests and abilities, all achieving proficient mean scores.

Moreover, the teacher exhibits effective behavior management skills, maintaining a positive environment with a mean of 3.08. It is noteworthy that all ratings consistently fall within the 'Proficient' and 'Highly Proficient' categories, indicating a shared understanding among stakeholders.

In conclusion, the findings underscore the teachers' ability to foster an engaging and collaborative classroom environment, emphasizing learner expression and varied learning experiences. The table serves as a valuable tool for recognizing strengths, addressing potential areas for improvement, and fostering continued excellence in classroom management.

As mentioned by Sultan (2018), maintaining order in the classroom and fostering positive relationships with learners can boost their confidence, increase interest in academic subjects, and improve their overall performance and achievements. Several studies have linked factors like teacher warmth, classroom order, and emotional support to learner success and performance. In essence, a well-structured and supportive classroom environment plays a significant role in positively influencing learner's attitudes and academic outcomes.

Table 5. Teachers' Teaching Proficiency Overall Mean Ratings in Terms of Assessment and Coaching

Rater	Mean (*M*)	Std. Deviation (*SD*)	Qualitative Description
Principal	3.05	0.11	Proficient
Co-Teacher	3.06	0.17	Proficient
Teacher (self)	3.24	0.43	Proficient
Overall	**3.12**	**0.24**	**Proficient**

Table 5 presents the teachers' proficiency in assessment and coaching, incorporating self-assessment, principal evaluations, and co-teacher feedback. The teacher demonstrates proficiency in establishing a conducive learning environment, although there is a noticeable divergence in ratings, especially with the principal's assessment being lower. This suggests a potential area for communication and collaborative efforts to align expectations and strategies for creating an optimal learning climate.

In terms of evaluating learning outcomes and re-diagnosing learning needs, the teacher maintains proficiency, emphasizing a sense of progress towards educational goals. Additionally, the teacher recognizes the pivotal role of teacher quality in learner success, receiving a proficient mean rating of 3.11.

Mentoring learners in content and skills difficulties stands out as a highly proficient competency, underscoring the teachers' ability to provide valuable support to learners. The teacher also excels in coaching learners through various activities and decisions, exhibiting proficiency in adapting coaching approaches to different situations.

Encouraging learners to complete tasks through questioning, while proficient, indicates a potential area for enhancement. The teachers' adaptability in coaching and mentoring, particularly when learners can independently make decisions, receives proficient mean ratings.

In essence, this table offers a nuanced understanding of the teachers' strengths in assessment and coaching, pinpointing areas for refinement and growth. The collaborative nature of the evaluation process involving self-assessment, principal, and co-teacher perspectives ensures a holistic approach to professional development, facilitating ongoing improvements in teaching proficiency.

Based on Magno (2018) emphasizes the importance of aligning assessment and planning activities in education. It emphasizes the use of assessment data to plan and modify teaching-learning plans, integrating assessment procedures into the execution of activities. Teachers must promptly communicate learner's progress to parents, superiors, and themselves, and employ various assessment strategies for monitoring and evaluating learning. Regular monitoring and feedback on learner's understanding of content are also crucial. This highlights the interconnectedness of assessment, planning, and effective communication in the educational process.

Table 6. Teachers' Teaching Proficiency Overall Mean Ratings in Terms of Collaboration and Teamwork

Rater	Mean (*M*)	Std. Deviation (*SD*)	Qualitative Description
Principal	2.26	0.50	Proficient
Co-Teacher	3.12	0.28	Proficient
Teacher (self)	3.17	0.42	Proficient
Overall	**3.18**	**0.40**	**Proficient**

Table 6 provides a comprehensive overview of the teachers' proficiency in collaboration and teamwork, revealing valuable insights from self-assessment, principal evaluations, and co-teacher feedback. A standout strength is evident in the teachers' Assists the team in acquiring the resources and support it needs to accomplish its goals proficient mean of 3.20. This underscores the teachers' capability to navigate logistical challenges and foster an environment conducive to effective teamwork.

Conversely, an area for potential improvement lies in the indicator "Provides team members with a clear vision of what is to be accomplished by the team," which received a proficient mean of 2.86. This suggests a need for refining the communication of overarching goals, setting expectations, and inspiring team members toward a shared vision. Clarity in vision is fundamental for team alignment and motivation.

The implications of these findings are noteworthy. The teachers' strength in resource facilitation is a valuable asset that can be leveraged to further enhance collaborative efforts. On the other hand, recognizing the need for improvement in articulating a clear vision emphasizes the importance of effective communication in fostering cohesive teamwork.

Moving forward, a strategic focus on professional development could be considered, particularly in areas related to vision communication. Workshops or training sessions on effective communication strategies and leadership in collaborative settings could provide valuable tools for the teacher to enhance this aspect of their collaborative skill set.

The study by Hargreaves (2021) highlights complexities beyond the obvious advantages of teacher collaboration and offers a nuanced analysis of collaboration and

teamwork proficiency. It delves into ideas like professional capital, collaborative professionalism, and contrived collegiality, illuminating the complexities of teamwork. Furthermore, Le, Janssen, and Wubbels (2018) emphasize how important it is for teachers in Sweden to collaborate and work as a team in order to support the transition to research-based education. Their focus on context-specific development, collaborative learning communities, and bottom-up perspectives highlights the importance of multiple levels of engagement in schools. This thorough grasp of collaboration and teamwork proficiency provides a road map for focused professional development that builds on current competencies and targets particular areas in need of improvement. In the end, this strategy helps to foster the development of a more efficient and motivated collaborative teaching environment

Table 7. Teachers' Teaching Competencies in Overall Mean Ratings Terms of Flexibility and Adaptability

Rater	Mean (*M*)	Std. Deviation (*SD*)	Qualitative Description
Principal	3.15	0.39	Proficient
Co-Teacher	3.15	0.34	Proficient
Teacher (self)	3.06	0.36	Proficient
Overall	**3.12**	**0.36**	**Proficient**

Table 7 presents the teachers' proficiency in flexibility and adaptability. A notable strength emerges in the teachers' ability to encourage strong feedback mechanisms, as reflected in the highly proficient mean of 3.30. This signifies a commendable commitment to fostering open communication and continuous improvement, crucial elements in adapting to the dynamic demands of the educational environment.

On the other hand, the indicator "Look for positive ways to make changes" stands as an area with potential for improvement, registering a proficient mean of 3.08. Although still within the proficient range, this suggests an opportunity for the teacher to cultivate a more proactive attitude towards change, recognizing it as an avenue for positive growth and advancement in teaching methodologies.

The implications of these findings are multifaceted. Leveraging the strength in fostering a culture of strong feedback is crucial for continuous improvement and aligning teaching practices with evolving educational needs. Simultaneously, recognizing the room for improvement in proactively seeking positive changes underscores the importance of embracing change as an inherent aspect of professional development.

Strategically, targeted professional development activities could focus on change management strategies and instilling a positive outlook towards change. This might involve workshops or training sessions dedicated to equipping the teacher with the mindset and tools needed to navigate and welcome change as an opportunity for enhancement.

In conclusion, the nuanced analysis of flexibility and adaptability proficiency highlights the teachers' existing strengths and areas for growth. By capitalizing on feedback mechanisms and proactively embracing change, the teacher can further enhance their adaptability, contributing to a teaching approach that is not only proficient but also resilient and responsive to the evolving landscape of education.

On the other hand, Jadama (2019) emphasizes the importance of teachers' deep understanding of their subject matter in delivering effective content. This knowledge instills confidence in teachers, enabling them to select suitable teaching strategies and skills for their learners. Teachers with a strong command of the subject matter can provide detailed explanations to learners, enhancing their learning experience. The expertise and up-to-date knowledge positively impact the teaching-learning process, allowing learners to practice and apply knowledge in their daily activities. Overall, the paragraph emphasizes the significance of teachers' deep subject knowledge in facilitating effective teaching and meaningful learning experiences.

Part II. Level of Grade 7 Learner's Academic Performance

Table 8. Grade 7 Learner's Academic Performance in the 1st and 2nd Quarter

Key Subject Areas	First Quarter			Second Quarter			Overall Performance	
	Mean Percentage	Std. Deviation	Description	Mean Percentage	Std. Deviation	Description	Mean Percentage	Description
English	86.23	1.42	Very Satisfactory	86.18	1.28	Very Satisfactory	86.21	Very Satisfactory
Mathematics	86.24	1.15	Very Satisfactory	85.84	1.41	Very Satisfactory	86.04	Very Satisfactory
Science	86.10	0.77	Very Satisfactory	86.03	0.84	Very Satisfactory	86.07	Very Satisfactory
Overall Performance	**86.19**	**1.11**	**Very Satisfactory**	**86.02**	**1.18**	**Very Satisfactory**	**86.11**	**Very Satisfactory**

Legend: Outstanding 90-100, Very Satisfactory 85-89, Satisfactory 80-84, Fairly Satisfactory 75-79, Did Not Meet the Expectation – 75 below

The table 8 provided outlines the academic performance of a learner across two semesters in three subjects: English, Mathematics, and Science. The data illustrates a consistent and commendable performance throughout both semesters. In the first semester, the mean scores for English, Mathematics, and Science were 86.23, 86.24, and 86.10, respectively, with relatively low standard deviations, suggesting a tight distribution of scores around the mean. Similarly, in the second semester, the mean scores for these subjects remained consistently high, with slight fluctuations: 86.18 for English, 85.84 for Mathematics, and 86.03 for Science, accompanied by slightly increased standard deviations. Despite these minor variations, all scores remained within the "Very Satisfactory" range, indicating a strong and stable performance. The overall performance, considering both semesters, showcased mean scores of 86.21 for English, 86.04 for Mathematics, and 86.07 for Science, emphasizing the learner's consistently high academic achievement across the board.

The data presented reflects a learner consistently achieving high marks in English, Mathematics, and Science across two semesters. The mean scores consistently fall within the "Very Satisfactory" range, indicating a strong grasp of the subjects. However, there are slight decreases in mean scores for Mathematics in the second semester compared to the first.

While the learner's overall performance remains commendable and "Very Satisfactory," the minor decrease in Mathematics scores from the first to the second semester might suggest a need for focused attention or extra support in that subject area. It could be beneficial for the learner to engage in additional practice, seek clarification on challenging concepts, or even consider supplemental tutoring to maintain or improve their performance in Mathematics. This targeted effort could help ensure sustained high performance across all subjects.

Similar trends in academic performance, with slight fluctuations across semesters, are common and have been observed in various studies on learner achievement. Consistency in high scores across subjects, as seen in this case, often indicates a strong understanding and consistent effort by the learner. However, fluctuations in performance between semesters, particularly in a specific subject like Mathematics, have been noted in educational research.

Studies often highlight that learners might encounter challenges in particular subjects due to various factors such as the complexity of concepts, teaching methodologies, or personal learning styles. These fluctuations may not necessarily indicate a lack of understanding but might reflect variations in teaching methods, different topics covered, or individual learning curves.

Implications from such findings stress the importance of continuous support and tailored strategies to maintain consistent academic excellence. Educators often emphasize the significance of identifying and addressing weaker areas promptly to prevent further decline in performance. This could involve personalized learning plans, targeted interventions, or extra support sessions aimed at specific subjects where learners show a decline in performance over time.

Ambag (2015) highlights the importance of various elements in the teaching-learning process to help learners achieve high standards of learning and understand curricular goals. These elements include the teacher's knowledge of the subject matter, teaching approaches, instructional materials, and learning resources. Learners are expected to possess fundamental literacy, communication, numeracy, and critical thinking skills. Teachers should communicate learning goals, manage instructional time effectively, and choose appropriate teaching methods, activities, and materials. The interconnectedness of these elements is crucial for achieving comprehensive learner learning outcomes.

Part III. Correlation of Key Learning Areas per Quarter

Table 9. Test for Correlation of the Key Learning Areas in the 1st Quarter

Areas		N	Pearson Correlation	Sig. (2-tailed)	Int	Discussion
English	Mathematics	78	.426**	.000	Significant	Reject Ho
	Science		-.053	.647	Not Significant	Accept Ho
Mathematics	English	78	.426**	.000	Significant	Reject Ho
	Science		.625**	.000	Significant	Reject Ho
Science	English	78	-.053	.647	Not Significant	Accept
	Mathematics		.625**	.000	Significant	Reject Ho

**. Correlation is significant at the 0.01 level (2-tailed).

The table 9 provided correlation table examines the relationships between learner's academic performances in three subjects—English, Mathematics, and Science—specifically during the 1st quarter. The correlation coefficients reveal interesting insights into the connections between these subjects.

There is a moderate positive correlation (Pearson Correlation coefficient of .426) between English and Mathematics. This indicates that, during this period, there was a discernible, though not exceedingly strong, relationship between performances in these two subjects. The statistical significance, denoted by the Sig. value of .000, confirms that this correlation is statistically meaningful.

Conversely, the correlation between English and Science appears negligible, with a very weak negative correlation (Pearson Correlation coefficient of -.053) and a non-significant p-value of .647. This implies that, during this quarter, there was no notable relationship between the academic performances in English and Science among the pupils.

In contrast, Mathematics and Science display a notably stronger positive correlation (Pearson Correlation coefficient of .625**), signifying a substantial and statistically significant relationship between the performances in these two subjects during this specific period.

These findings suggest that while Mathematics and Science performances were closely linked during the first quarter, the relationship between English and Science performance was insignificant. This may indicate differing influences or learning patterns in these subjects during this particular timeframe for these learners. Understanding these correlations can aid educators in tailoring teaching strategies to potentially strengthen interrelated subjects or address specific areas that show weaker connections among learner's academic performances.

The review paper examines research conducted Vermunt, J. D., & Vermetten, Y. J. (2004). over the past decade on patterns in student learning, particularly in higher education contexts. It focuses on studies utilizing the Inventory of Learning Styles (ILS) and integrative learning theories, which assess various aspects of student learning such as cognitive and metacognitive strategies, conceptions of learning, and learning orientations. The review covers topics including theoretical frameworks, internal structures of learning strategies, developments in learning patterns over students' educational careers, the influence of personal and contextual factors on learning, relationships between learning patterns and academic outcomes, and the importance of process-oriented instruction. Overall, the paper provides insights into how understanding different learning patterns can inform instructional practices and support student academic performance.

Table 10. Test for Correlation of the Key Learning Areas in the 2nd Quarter

Key Learning Areas		N	Pearson Correlation	Sig. (2-tailed)	Int	Discussion
English	Mathematics	78	.397**	.000	Significant	Reject Ho
	Science		.206	.070	Not Significant	Accept Ho
Mathematics	English	78	.397**	.000	Significant	Reject Ho
	Science		.315**	.005	Significant	Reject Ho
Science	English	78	.206	.070	Not Significant	Accept
	Mathematics		.315**	.005	Significant	Reject Ho

**. Correlation is significant at the 0.01 level (2-tailed).

The table 10 shows the correlation analysis for learner's academic performance in the second quarter across three subjects—English, Mathematics, and Science—reveals distinct patterns of relationships between these subjects.

There is a moderate positive correlation (Pearson Correlation coefficient of .397**) between English and Mathematics, indicating a significant relationship between performances in these subjects during this quarter. This correlation, consistent with the previous quarter, remains statistically meaningful, suggesting a consistent association between achievements in English and Mathematics.

In contrast, the correlation between English and Science remains weak (Pearson Correlation coefficient of .206) during this quarter, similar to the previous analysis. The p-value of .070 indicates that this correlation lacks statistical significance, implying that there isn't a robust relationship between English and Science performances for these learners during this period.

Conversely, Mathematics and Science show a moderate positive correlation (Pearson Correlation coefficient of .315), indicating a notable relationship between the

performances in these subjects. This correlation is statistically significant, indicating a consistent association between Mathematics and Science achievements during this specific quarter.

These findings mirror those from the previous quarter, emphasizing the consistent association between Mathematics and both English and Science performances. However, the correlation between English and Science remains relatively weak and non-significant. Educators can leverage these insights to tailor instructional strategies, potentially strengthening connections between subjects or focusing on areas that exhibit weaker relationships in learner's academic performances during this timeframe.

The research conducted by Mushtaq, I., & Khan, S. N. (2012) focuses on investigating factors that influence college students' performance in intermediate examinations, particularly examining their approach to communication, access to learning facilities, availability of proper guidance, and levels of family stress. These factors are identified as crucial elements shaping students' academic outcomes. Effective communication skills are highlighted as essential, as students who can effectively articulate their thoughts and engage in class discussions tend to have a deeper understanding of course materials, which positively impacts their exam performance. Additionally, access to learning resources such as libraries, laboratories, and study materials is noted as critical for facilitating learning and comprehension. Proper guidance from teachers and mentors is emphasized as important for supporting students' academic journey, providing them with clear instructions, feedback, and mentorship to navigate challenges effectively. Conversely, family stressors such as financial difficulties or personal conflicts are recognized as potential barriers to academic success, as they can contribute to increased anxiety, distraction, and decreased motivation among students. Addressing these factors comprehensively through support systems, resources, and interventions is essential for promoting students' academic performance and overall well-being.

Table 11. Test for Correlations of the Key Learning Areas

Key Learning Areas		N	Pearson Correlation	Sig. (2-tailed)	Int	Discussion
English	Mathematics	78	.439**	.000	Significant	Reject Ho
	Science		.158	.167	Not Significant	Accept Ho
Mathematics	English	78	.439**	.000	Significant	Reject Ho
	Science		.563**	.000	Significant	Reject Ho
Science	English	78	.158	.167	Not Significant	Accept
	Mathematics		.563**	.000	Significant	Reject Ho

**. Correlation is significant at the 0.01 level (2-tailed).

The table 11 shows the correlation analysis between English and Mathematics scores reveals a moderate positive correlation (Pearson's $r = 0.439$, $p < 0.01$), indicating a reliable relationship between the two subjects. As English scores increase, there is a

corresponding increase in Mathematics scores. This suggests that proficiency in English is associated with a positive impact on Mathematics performance. The statistical significance ($p < 0.01$) underlines the robustness of this correlation, emphasizing its practical significance for educators and curriculum planners.

Conversely, the correlation between English and Science scores is weak and not statistically significant (Pearson's $r = 0.158$, $p = 0.167$). Although there is a positive correlation, the lack of significance suggests that any observed relationship may be due to random chance. Caution is advised in drawing conclusions about a direct connection between English and Science performance. Educators may need to explore additional factors influencing this relationship to inform targeted interventions.

In the case of Mathematics and Science, there is a strong positive correlation (Pearson's $r = 0.563$, $p < 0.01$), indicating a reliable and significant relationship between these subjects. Higher scores in Mathematics are associated with higher scores in Science, suggesting that proficiency in one subject positively influences performance in the other. Educators could consider integrated instructional approaches that leverage this strong correlation to enhance overall academic achievement.

In summary, the study reveals a moderate positive correlation between English and Mathematics, a weak positive correlation (though not statistically significant) between English and Science, and a strong positive and significant correlation between Mathematics and Science. These findings provide valuable insights for educators to tailor instructional strategies, emphasizing the interconnectedness of subjects and the potential benefits of integrated teaching approaches.

Hansen, M., & Gonzalez, T. (2014) their study examines the correlation between various classroom activities and academic performance gains in math and science among middle school students in North Carolina. It finds that certain activities, such as listening, taking notes, and using technology in math class, are associated with increased math achievement. Similarly, completing science experiments and projects, as well as listening to teachers explain scientific concepts, are linked to gains in science achievement. These findings suggest that active engagement and hands-on learning in the classroom contribute to improved academic performance in math and science subjects. Overall, the study underscores the importance of pedagogical approaches that foster student engagement and active learning across STEM disciplines.

Part IV. Significant Relationship Between the Teachers' Teaching Proficiency and Grade 7 Learner's Academic Performance in the Key Learning Areas

Domains	***English***		***Mathematics***		***Science***	
	p	***sig-value***	***p***	***sig-value***	***P***	***sig-value***
Communication and Interpersonal Skill	0.005	0.966 Not Significant	-0.036	0.754 Not Significant	-0.116	0.311 Not Significant
Organization and Planning	0.199	0.081 Not Significant	0.165	0.15 Not Significant	0.145	0.205 Not Significant
Classroom Management	-0.04	0.725 Not Significant	0.021	0.854 Not Significant	-0.06	0.604 Not Significant
Assessment and Coaching	0.081	0.478 Not Significant	0.14	0.221 Not Significant	0.046	0.689 Not Significant
Collaboration and Teamwork	-0.151	0.188 Not Significant	-0.07	0.544 Not Significant	-0.067	0.562 Not Significant
Flexibility and Adaptability	0.088	0.441 Not Significant	0.073	0.527 Not Significant	-0.013	0.91 Not Significant

The correlation analysis conducted on the proficiency skills of teachers and the learner's academic performance in English, Mathematics, and Science revealed several interesting findings. Across all proficiency skills assessed - Communication and Interpersonal Skill, Organization and Planning, Classroom Management, Assessment and Coaching, Collaboration and Teamwork, and Flexibility and Adaptability - the

correlation coefficients with learner's academic performance were not statistically significant.

This implies that there is no strong linear relationship between the proficiency skills of teachers and the learner's academic performance in the subjects of English, Mathematics, and Science. In other words, variations in teachers' proficiency in these skills do not appear to have a significant impact on learner's academic achievements in these specific subjects.

In the study conducted by Hansen, M., & Gonzalez, T. (2014) the findings suggest that factors other than teachers' proficiency skills may play a more influential role in determining learner's academic performance in English, Mathematics, and Science. Factors such as learner's individual abilities, home environment, peer interactions, and instructional methods may have a greater impact on academic outcomes in these subjects.

While proficiency in teaching skills is undoubtedly important for effective instruction, this analysis underscores the complexity of factors influencing learner achievement and highlights the need for comprehensive approaches to improving educational outcomes. Further research exploring additional variables and their interactions could provide deeper insights into the dynamics of teacher-learner relationships and academic performance.

Table 13. Results of Test for Significant Relationship Between the Teachers' Teaching Proficiency in Terms of Communication and Interpersonal Skills and the Grade 7 Learner's Academic Performance in the Key Learning Areas

Survey Questions		Academic Performance in English		Academic Performance in Mathematics		Academic Performance in Science	
			Remarks		Remarks		Remarks
Seeks out and listens to others who have contrary opinions.	Pearson Correlation	-.059	No Linear Relationship	.065	No Linear Relationship	.015	No Linear Relationship
	Sig. (2-tailed)	.607	Not Significant	.574	Not Significant	.897	Not Significant
Makes people comfortable in different situations.	Pearson Correlation	.047	No Linear Relationship	.154	Weak	.060	No Linear Relationship
	Sig. (2-tailed)	.685	Not Significant	.179	Not Significant	.602	Not Significant
Varies communication approach when dealing with others from different background	Pearson Correlation	-.018	No Linear Relationship	-.050	No Linear Relationship	-.113	Negative Weak Relationship
	Sig. (2-tailed)	.873	Not Significant	.662	Not Significant	.325	Not Significant
Builds strong interpersonal relationships with other people	Pearson Correlation	-.073	No Linear Relationship	-.101	Negative Weak Relationship	-.062	No Linear Relationship
	Sig. (2-tailed)	.526	Not Significant	.380	Not Significant	.591	Not Significant
Shows genuine sensitivity to the feelings of others.	Pearson Correlation	.004	No Linear Relationship	-.063	No Linear Relationship	-.057	No Linear Relationship
	Sig. (2-tailed)	.974	Not Significant	.581	Not Significant	.623	Not Significant
Informs people of events that are relevant to them.	Pearson Correlation	-.124	Negative Weak Relationship	-.130	Negative Weak Relationship	-.107	Negative Weak Relationship
	Sig. (2-tailed)	.280	Not Significant	.257	Not Significant	.349	Not Significant
Makes persuasive, high impact presentations before groups.	Pearson Correlation	.129	Weak	.014	No Linear Relationship	-.064	No Linear Relationship
	Sig. (2-tailed)	.262	Not Significant	.901	Not Significant	.576	Not Significant
Handles questions from the audience well.	Pearson Correlation	.115	Weak	.091	No Linear Relationship	.035	No Linear Relationship
	Sig. (2-tailed)	.315	Not Significant	.430	Not Significant	.759	Not Significant

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

The table 13 shows the analysis of the relationship between teachers' teaching proficiency in terms of communication and interpersonal skills and the learner's academic performance yields complex findings across different subjects.

For the performance in English, there is no linear relationship with any of the assessed teaching proficiency, as indicated by Pearson Correlation values close to zero and p-values greater than 0.05. This suggests that the teachers' communication and interpersonal skills, as evaluated in this study, do not significantly impact the performance of learners in English.

Similarly, in Mathematics, most correlations are not statistically significant, except for a weak positive correlation (Pearson Correlation = 0.154, $p > 0.05$) with the competency of making people comfortable in different situations. This implies that while there is a slight association between this specific teaching competency and Mathematics performance, the overall impact is weak and should be interpreted with caution.

In Science, the results show predominantly no linear relationships, with most Pearson Correlation values close to zero and p-values exceeding 0.05. There is a negative weak correlation (Pearson Correlation = -0.113, $p > 0.05$) between the competency of varying communication approach with others from different backgrounds and Science performance. However, this negative correlation is weak, and the lack of statistical significance suggests limited practical significance.

It suggests that the evaluated communication and interpersonal skills of teachers, as outlined in this study, may not be substantial determinants of learner's academic performance in English, Mathematics, and Science. It is crucial to recognize the multifaceted nature of teaching and learning, with various factors influencing academic outcomes. While communication and interpersonal skills are undoubtedly vital aspects of effective teaching, additional variables not covered in this study may contribute significantly to learner's performance in these subjects. Further research and exploration of diverse teaching proficiency and their impact on academic achievement are warranted for a comprehensive understanding of the dynamics between teacher skills and learner success.

The research conducted by Mushtaq, I., & Khan, S. N. (2012) focuses on investigating factors that influence college students' performance in intermediate examinations, particularly examining their approach to communication, access to learning facilities, availability of proper guidance, and levels of family stress. These factors are identified as crucial elements shaping students' academic outcomes. Effective communication skills are highlighted as essential, as students who can effectively articulate their thoughts and engage in class discussions tend to have a deeper understanding of course materials, which positively impacts their exam performance. Additionally, access to learning resources such as libraries, laboratories, and study materials is noted as critical for facilitating learning and comprehension. Proper guidance from teachers and mentors is emphasized as important for supporting students' academic journey, providing them with clear instructions, feedback, and mentorship to navigate challenges effectively. Conversely, family stressors such as financial difficulties or personal conflicts are recognized as potential barriers to academic success, as they can

contribute to increased anxiety, distraction, and decreased motivation among students. Addressing these factors comprehensively through support systems, resources, and interventions is essential for promoting students' academic performance and overall well-being.

Table 14. Results of Test for Significant Relationship Between the Teachers' Teaching Proficiency in Terms of Organization and Planning and the Grade 7 Learner's Academic Performance in the Key Learning Areas

Survey Question		Performance in English		Performance in Mathematics		Performance in Science	
			Remarks		Remarks		Remarks
Monitors information that is relevant to on-going projects and activities	Pearson Correlation	.199	Weak	.165	Weak	.145	Weak
	Sig. (2-tailed)	.081	Not Significant	.149	Not Significant	.205	Not Significant
Obtains and uses relevant information to identify symptoms and underlying problems	Pearson Correlation	-.040	No Linear Relationship	.020	No Linear Relationship	-.059	No Linear Relationship
	Sig. (2-tailed)	.725	Not Significant	.865	Not Significant	.605	Not Significant
Makes decisions on time.	Pearson Correlation	.081	No Linear Relationship	.138	Weak	.047	No Linear Relationship
	Sig. (2-tailed)	.478	Not Significant	.227	Not Significant	.686	Not Significant
Anticipates negative and positive consequences.	Pearson Correlation	-.151	Negative Weak Relationship	-.072	No Linear Relationship	-.066	No Linear Relationship
	Sig. (2-tailed)	.188	Not Significant	.533	Not Significant	.565	Not Significant
Knows when expert knowledge is needed and seeks it out to solve problems	Pearson Correlation	.088	No Linear Relationship	.071	No Linear Relationship	-.013	No Linear Relationship
	Sig. (2-tailed)	.441	Not Significant	.535	Not Significant	.912	Not Significant
Develops plans and schedules to achieve specific goals efficiently.	Pearson Correlation	.099	No Linear Relationship	.008	No Linear Relationship	-.061	No Linear Relationship
	Sig. (2-tailed)	.387	Not Significant	.943	Not Significant	.596	Not Significant
Prioritizes tasks in order to stay focused on those that are most important.	Pearson Correlation	-.010	No Linear Relationship	-.015	No Linear Relationship	-.125	Negative Weak Relationship
	Sig. (2-tailed)	.933	Not Significant	.893	Not Significant	.276	Not Significant
Organizes people around specific tasks to help them work together on a common objective	Pearson Correlation	.121	Weak	-.019	No Linear Relationship	-.017	No Linear Relationship
	Sig. (2-tailed)	.293	Not Significant	.872	Not Significant	.886	Not Significant

*. Correlation is significant at the 0.05 level (2-tailed). **. Correlation is significant at the 0.01 level (2-tailed).

The table 14 presents the Results of Test for Significant Relationship Between the Teachers' Teaching Proficiency in Terms of Organization and Planning and the Academics Performance of the Learners. The examination of the relationship between a teachers' teaching proficiency in organization and planning and the learner's academic performance yielded interesting insights. Looking at the performance in English, there is a weak positive correlation (Pearson Correlation = 0.199, p = 0.081) with the teachers' ability to monitor relevant information for ongoing projects. Although not statistically significant at the 0.05 level, this suggests a potential positive link between the teachers' organizational skills and English performance.

Similarly, in Mathematics, there is a weak positive correlation (Pearson Correlation = 0.165, p = 0.149) with the same competency of monitoring relevant information, though it does not reach statistical significance. In Science, the correlation is also weak (Pearson Correlation = 0.145, p = 0.205). These findings imply that the teachers' ability to stay informed about ongoing activities may have a modest association with learner performance in Mathematics and Science.

Conversely, there are no significant linear relationships between academic performance and proficiency such as obtaining and using relevant information, making decisions on time, anticipating consequences, seeking expert knowledge, developing plans and schedules, prioritizing tasks, and organizing people around specific tasks. The lack of statistical significance in these cases suggests that these specific organizational and planning proficiency may not strongly influence learner's performance in English, Mathematics, or Science.

In conclusion, the study indicates that the teachers' skill in monitoring relevant information for ongoing projects may have a modest positive correlation with learner performance in English, Mathematics, and Science. However, other organizational and planning proficiency examined in this study do not appear to have significant associations with academic outcomes. Further research may be beneficial to explore additional factors contributing to the complex dynamics between teacher proficiency and learner achievement.

Teacher proficiency significantly impacts learner's performance, encompassing effective classroom management, diverse instructional materials, pedagogical employability, effective communication, and subject content knowledge. Adodo (2019) defines teacher proficiency as a combination of subject content knowledge, pedagogical skills, classroom communication, and competent evaluation of instructional objectives. This competence is crucial for creating a learning environment and promoting positive learner performance. The statement emphasizes the multifaceted nature of teacher proficiency and its direct connection to learner's academic success.

Table 15. Results of Test for Significant Relationship Between the Teachers' Teaching Proficiency in Terms of Classroom Management and the Grade 7 Learner's Academic Performance in the Key Learning Areas

Survey Questions		Performance in English		Performance in Mathematics		Performance in Science	
			Remarks		Remarks		Remarks
Encourage learners to express their opinion, discuss, and responding related to learning	Pearson Correlation	.077	No Linear Relationship	-.089	No Linear Relationship	.067	No Linear Relationship
	Sig. (2-tailed)	.501	Not Significant	.436	Not Significant	.563	Not Significant
Learning management for learners to work together.	Pearson Correlation	.088	No Linear Relationship	-.065	No Linear Relationship	.102	Weak
	Sig. (2-tailed)	.442	Not Significant	.569	Not Significant	.373	Not Significant
Manages classroom structure to engage learners, individually or in groups in meaningful exploration	Pearson Correlation	.033	No Linear Relationship	-.053	No Linear Relationship	.018	No Linear Relationship
	Sig. (2-tailed)	.774	Not Significant	.647	Not Significant	.873	Not Significant
Provide activities for learners to learn happily	Pearson Correlation	.126	Weak	.116	Weak	-.028	No Linear Relationship
	Sig. (2-tailed)	.271	Not Significant	.310	Not Significant	.807	Not Significant
Focus on real and lively practice for learners to be able to think and solve the problem	Pearson Correlation	.059	No Linear Relationship	.141	Weak	.072	No Linear Relationship
	Sig. (2-tailed)	.611	Not Significant	.218	Not Significant	.531	Not Significant
Activities are selected by the learners according to their ability and interest	Pearson Correlation	-.165	Negative Weak Relationship	-.015	No Linear Relationship	-.044	No Linear Relationship
	Sig. (2-tailed)	.148	Not Significant	.899	Not Significant	.699	Not Significant
Physical environmental condition for enhancing one's learning by working.	Pearson Correlation	-.099	No Linear Relationship	.092	No Linear Relationship	.033	No Linear Relationship
	Sig. (2-tailed)	.389	Not Significant	.424	Not Significant	.775	Not Significant
Exhibited effective and constructive behavior management skills by applying positive environment	Pearson Correlation	-.140	Negative Weak Relationship	.102	Weak	-.040	No Linear Relationship
	Sig. (2-tailed)	.223	Not Significant	.377	Not Significant	.727	Not Significant

*. Correlation is significant at the 0.05 level (2-tailed). **Correlation is significant at the 0.01 level (2-tailed).

The table 15 shows the results of Test for Significant Relationship Between the Teachers' Teaching Proficiency in Terms of Classroom Management and the Academics Performance of the Learners in English, Mathematics, and Science. Across the assessed

teaching methods, none displayed a significant correlation with academic performance in any subject. Traits like encouraging learners to express opinions, managing classroom structures for exploration, providing enjoyable learning activities, focusing on practical problem-solving, allowing learner-selected activities, creating positive learning environments, and promoting collaborative learning showed correlations close to zero or weak correlations lacking statistical significance across all subjects.

Only the method related to "learning management for learners to work together" exhibited a weak positive correlation with Science, but this correlation was not statistically significant. Similarly, "exhibiting effective behavior management skills through a positive environment" displayed weak correlations in Mathematics and a negative weak correlation in English, yet these weren't statistically significant.

These findings suggest that during this evaluation period, the examined teaching approaches may not directly influence or predict academic achievements in English, Mathematics, or Science. It implies that other unmeasured factors could have a more significant impact on academic success during this timeframe.

One of which is the study conducted by Valiandes (2018) found learners made better progress in classrooms where differentiated instruction methods were systematically employed compared to learners in classrooms where differentiated instruction methods were not: Findings revealed that the quality of differentiated teaching demonstrated by teachers had a great impact on the learner’s academic performance when these methods in teaching were integrated into mixed classrooms, thus promotes equity, optimization of quality and effectiveness in teaching.

Table 16. Results of Test for Significant Relationship Between the Teachers' Teaching Proficiency in Terms of Assessment and Coaching and the Grade 7 Learner's Academic Performance in the Key Learning Areas

Survey Questions		Academic Performance in English		Academic Performance in Mathematics		Academic Performance in Science	
			Remarks		Remarks		Remarks
Establishing a climate conducive to learning-a learning environment based on mutual respect and trust	Pearson Correlation	-.025	No Linear Relationship	-.112	Negative Weak Relationship	-.026	No Linear Relationship
	Sig. (2-tailed)	.827	Not Significant	.327	Not Significant	.819	Not Significant
Evaluating the learning outcomes and re-diagnosing learning needs—have a sense of progress towards goals	Pearson Correlation	.043	No Linear Relationship	-.080	No Linear Relationship	.002	No Linear Relationship
	Sig. (2-tailed)	.707	Not Significant	.487	Not Significant	.987	Not Significant
A growing recognition that teacher quality is a critical factor in learner success	Pearson Correlation	.029	No Linear Relationship	-.035	No Linear Relationship	-.068	No Linear Relationship
	Sig. (2-tailed)	.801	Not Significant	.760	Not Significant	.552	Not Significant
Mentors learners in content and skills difficulties	Pearson Correlation	.179	Weak	-.029	No Linear Relationship	-.081	No Linear Relationship
	Sig. (2-tailed)	.116	Not Significant	.804	Not Significant	.480	Not Significant
Encourage the learner to complete a task through questions	Pearson Correlation	.174	Weak	-.086	No Linear Relationship	-.027	No Linear Relationship
	Sig. (2-tailed)	.128	Not Significant	.457	Not Significant	.813	Not Significant
Coach the learner what the goals are	Pearson Correlation	-.118	Negative Weak Relationship	-.114	Negative Weak Relationship	-.041	No Linear Relationship
	Sig. (2-tailed)	.305	Not Significant	.320	Not Significant	.720	Not Significant
Coach the learner to do an activity in another way	Pearson Correlation	.212	Weak	.027	No Linear Relationship	-.027	No Linear Relationship
	Sig. (2-tailed)	.062	Not Significant	.813	Not Significant	.812	Not Significant
Use mentoring if a learner can independently make a decision	Pearson Correlation	.010	No Linear Relationship	-.187	Negative Weak Relationship	-.105	Negative Weak Relationship
	Sig. (2-tailed)	.934	Not Significant	.102	Not Significant	.360	Not Significant

. Correlation is significant at the 0.05 level (2-tailed).* *. Correlation is significant at the 0.01 level (2-tailed).*

The table 16 shows the relationship between a teachers' teaching proficiency in assessment and coaching and the learner's academic performance provides valuable insights. In terms of establishing a conducive learning environment based on mutual respect and trust, there is no significant linear relationship with performance in English, Mathematics, or Science. This suggests that this specific competency may not strongly influence learner's academic outcomes in these subjects.

Similarly, the teachers' ability to evaluate learning outcomes and re-diagnose learning needs, reflecting a sense of progress towards goals, does not show a significant linear relationship with performance in English, Mathematics, or Science. This indicates that this competency may not be a determining factor in learner's achievements in these subjects.

The recognition of teacher quality as a critical factor in learner success also does not exhibit a significant linear relationship with academic performance in English, Mathematics, or Science. The findings suggest that the general acknowledgment of the importance of teacher quality may not directly translate into improved learner outcomes in these specific subjects.

Mentoring learners in content and skills difficulties, encouraging learners to complete tasks through questions, coaching learners on goals and alternative approaches, and using mentoring when a learner can independently make decisions show weak positive or negative correlations in some cases. However, the lack of statistical significance implies that this proficiency may have limited influence on learner's performance in English, Mathematics, and Science.

In conclusion, the study suggests that, based on the evaluated proficiency in assessment and coaching, there is no strong and consistent linear relationship with learner's academic performance in English, Mathematics, and Science. The findings emphasize the need for further exploration and consideration of various factors that contribute to the complex dynamics between teacher proficiency and learner achievement in specific subjects.

In addition, Admiraal et al. (2019) state that assessment is integral to teaching. Teachers use assessment techniques that assess learner's skills (i.e., cognitive, affective, and psychomotor). In his research conducted in Turkish Secondary Schools, the teachers are more successful and use various evaluation techniques to evaluate learner's performance and give more weightage to observation, class performance, and discussion., than weekly or monthly test scores. The key objective of the assessment is to explore the learners learning; it is only possible when the teacher assesses all the aspects of learner's personality (i.e., communication, expression, writing, reading, explaining, and thinking skills.)

Table 17. Results of Test for Significant Relationship Between the Teachers' Teaching Proficiency in Terms of Collaboration and Teamwork and the Grade 7 Learner's Academic Performance in the Key Learning Areas

Survey Question		Academic Performance in English		Academic Performance in Mathematics		Academic Performance in Science	
			Remarks		Remarks		Remarks
Formulates clear goals that inspire team members' commitment.	Pearson Correlation	.061	No Linear Relationship	-.007	No Linear Relationship	-.168	Negative Weak Relationship
	Sig. (2-tailed)	.597	Not Significant	.951	Not Significant	.141	Not Significant
Selects team members appropriately, taking into account diversity of viewpoints and technical skills.	Pearson Correlation	.188	Weak	.198	Weak	.153	Weak
	Sig. (2-tailed)	.100	Not Significant	.083	Not Significant	.180	Not Significant
Provides team members with clear vision of what is to be accomplished by the team	Pearson Correlation	.126	Weak	.060	No Linear Relationship	-.001	No Linear Relationship
	Sig. (2-tailed)	.271	Not Significant	.599	Not Significant	.993	Not Significant
Creates a process for monitoring team performance.	Pearson Correlation	.021	No Linear Relationship	-.053	No Linear Relationship	.007	No Linear Relationship
	Sig. (2-tailed)	.856	Not Significant	.645	Not Significant	.950	Not Significant
Assigns tasks and responsibilities to individual team members consistent with their proficiency and interest.	Pearson Correlation	.012	No Linear Relationship	-.113	Negative Weak Relationship	-.002	No Linear Relationship
	Sig. (2-tailed)	.917	Not Significant	.325	Not Significant	.988	Not Significant
Creates a team setting in which team members feel that their suggestions make a difference	Pearson Correlation	.160	Weak	.068	No Linear Relationship	.030	No Linear Relationship
	Sig. (2-tailed)	.161	Not Significant	.556	Not Significant	.797	Not Significant
Recognizes, praises, and rewards team members for their contributions.	Pearson Correlation	.045	No Linear Relationship	-.036	No Linear Relationship	.016	No Linear Relationship
	Sig. (2-tailed)	.693	Not Significant	.757	Not Significant	.890	Not Significant
Assists the team in acquiring the resources and support it needs to accomplish its goals.	Pearson Correlation	.019	No Linear Relationship	.144	Weak	.018	No Linear Relationship
	Sig. (2-tailed)	.868	Not Significant	.210	Not Significant	.875	Not Significant

. Correlation is significant at the 0.05 level (2-tailed).* *. Correlation is significant at the 0.01 level (2-tailed).*

The table 17 shows the relationship between a teachers' teaching proficiency in collaboration and teamwork and the learner's academic performance reveals interesting patterns. Examining the performance in English, it appears that the teachers' ability to formulate clear goals that inspire team members' commitment does not show a significant linear relationship. This suggests that this specific competency may not strongly impact learner's academic outcomes in English.

In Mathematics, there is a weak positive correlation (Pearson Correlation = 0.198, p = 0.083) between the teachers' competency in selecting team members appropriately, considering diversity of viewpoints and technical skills, and learner performance. Although this correlation is statistically significant at the 0.05 level, the strength of the relationship is considered weak. In Science, a similar weak positive correlation (Pearson Correlation = 0.153, p = 0.180) is observed for this competency. These findings imply that the teachers' skill in team selection may have a modest association with learner's performance in Mathematics and Science.

Other proficiency in collaboration and teamwork, such as providing a clear vision, creating a process for monitoring team performance, assigning tasks based on proficiency, creating a setting where suggestions matter, recognizing contributions, and assisting teams in acquiring resources, do not show significant linear relationships with academic performance in English, Mathematics, or Science.

In conclusion, while there are some weak positive correlations in the context of selecting team members appropriately and performance in Mathematics and Science, the overall results suggest that the evaluated proficiency in collaboration and teamwork may not strongly influence learner's academic performance in English, Mathematics, and Science. Additional research and consideration of various factors contributing to the dynamics between teacher proficiency and learner achievement are warranted for a comprehensive understanding.

Espinosa (2020) highlights the importance of lesson study as a culture of professional development that promotes teachers working together, sharing experiences, and observing each other during teaching. This collaborative approach enhances teachers' effectiveness in learner achievement. However, the study suggests that there is no strong linear relationship between teachers' proficiency in assessment and coaching and learner's academic performance in English, Mathematics, and Science. This suggests that the relationship between teacher proficiency and learner achievement is not straightforward, and other factors may play a role. Overall, collaborative professional development activities like lesson study are valuable and effective, but the relationship between certain aspects of teacher proficiency and learner academic performance is nuanced and not solely determined by one aspect of teacher proficiency. Both call for a more comprehensive understanding of the interplay between teaching practices, assessment methods, coaching strategies, and various contextual factors. A holistic understanding is necessary to enhance learner's academic success.

Table 18. Results of Test for Significant Relationship Between the Teachers' Teaching Proficiency in Terms of Flexibility and Adaptability and the Grade 7 Learner's Academic Performance Key in the Learning Areas

Survey Question		Academic Performance in English		Academic Performance in Mathematics		Academic Performance in Science	
			Remarks		Remarks		Remarks
Look for positive ways to make changes	Pearson Correlation	-.032	No Linear Relationship	-.085	No Linear Relationship	.022	No Linear Relationship
	Sig. (2-tailed)	.778	Not Significant	.461	Not Significant	.847	Not Significant
Adapt to change and new ways of working quickly	Pearson Correlation	.083	No Linear Relationship	.158	Weak	.066	No Linear Relationship
	Sig. (2-tailed)	.469	Not Significant	.166	Not Significant	.568	Not Significant
Show willingness to learn new methods.	Pearson Correlation	.024	No Linear Relationship	.168	Weak	.009	No Linear Relationship
	Sig. (2-tailed)	.836	Not Significant	.143	Not Significant	.937	Not Significant
Work collaboratively with learners	Pearson Correlation	-.117	Negative Weak Relationship	.054	No Linear Relationship	-.002	No Linear Relationship
	Sig. (2-tailed)	.306	Not Significant	.641	Not Significant	.987	Not Significant
Teachers are facilitators of educational learning environment	Pearson Correlation	.114	Weak	.111	Weak	.060	No Linear Relationship
	Sig. (2-tailed)	.321	Not Significant	.333	Not Significant	.600	Not Significant
Flexible in considering change in plans for improvements.	Pearson Correlation	.229*	Very Strong Positive	.092	No Linear Relationship	.096	No Linear Relationship
	Sig. (2-tailed)	.044	Not Significant	.425	Not Significant	.401	Not Significant
Eliminates the idea of generation gaps	Pearson Correlation	.204	Weak	.165	Weak	.041	No Linear Relationship
	Sig. (2-tailed)	.073	Not Significant	.149	Not Significant	.724	Not Significant
Encourages strong feedback mechanism	Pearson Correlation	.023	No Linear Relationship	.172	Weak	.019	No Linear Relationship
	Sig. (2-tailed)	.844	Not Significant	.133	Not Significant	.870	Not Significant

*. Correlation is significant at the 0.05 level (2-tailed). **. Correlation is significant at the 0.01 level (2-tailed).

The table 18 shows the relationship between a teachers' teaching proficiency in flexibility and adaptability and the learner's academic performance yields intriguing findings. In terms of looking for positive ways to make changes, adapting to change and new ways of working quickly, and showing a willingness to learn new methods, there is no significant linear relationship with performance in English, Mathematics, or Science. This suggests that this specific proficiency related to flexibility and adaptability may not strongly influence learner's academic outcomes in these subjects.

Interestingly, the teachers' ability to be flexible in considering changes in plans for improvements shows a very strong positive correlation with performance in Mathematics (Pearson Correlation = 0.229, p = 0.044). While this correlation is statistically significant at the 0.05 level, it's important to note that the strength of the relationship is considered very strong. However, this competency does not show significant linear relationships with performance in English or Science. This implies that the teachers' flexibility in adjusting plans for improvement may have a notable impact on Mathematics performance specifically.

Other proficiency such as working collaboratively with learners, perceiving teachers as facilitators of the learning environment, eliminating the idea of generation gaps, and encouraging a strong feedback mechanism do not exhibit significant linear relationships with academic performance in English, Mathematics, or Science.

In conclusion, the study suggests that, overall, the evaluated proficiency in flexibility and adaptability may not strongly influence learner's academic performance in English, Mathematics, and Science. The exception is the significant positive correlation between the teachers' flexibility in considering changes in plans for improvements and Mathematics performance. Further exploration and consideration of various factors contributing to the dynamics between teacher proficiency and learner achievement are necessary for a comprehensive understanding.

Teacher proficiency, including flexibility, adaptability, and subject matter expertise, plays a crucial role in the teaching-learning process. However, the relationship between teacher proficiency and learner achievement is nuanced and requires further exploration. The first conclusion suggests that evaluated proficiency in flexibility and adaptability may not strongly influence learner's academic performance in English, Mathematics, and Science, with the exception of a significant positive correlation between teachers' flexibility and changes in plans for improvements and Mathematics performance.

Jadama (2019), argues that teachers' in-depth knowledge of the subject matter allows them to use various methodologies suited to deliver it, enabling them to confidently select teaching strategies and skills best suited for learner's understanding. The exception in Mathematics performance emphasizes that specific elements of teacher proficiency might have a notable impact on learner achievement.

In conclusion, the connection between teacher proficiency and learner academic performance highlights the multifaceted nature of this relationship and the need for a deeper exploration of the dynamics between teacher proficiency and learner achievement in various subjects.

Part V. Teachers' Continuing Professional Development Plan

The results presented in the previous section have paved way for the development of teacher's continuing professional development plan. The proposed plan is to improve a teacher's skill, knowledge and effectiveness in the classroom. It's all about identifying specific professional goals and objectives that a teacher wants to achieve, identifying the specific areas that needs improvement, developing a roadmap for professional growth, identifying the resources and support required to support to implement the plan effectively, establishing timeline with clear milestone and deadlines for achieving the outline goals. Learners intervention plan is a plan structured to support individuals who may be struggling with their learning. It typically involves identifying specific challenges a learner is facing and developing strategies to address them. The key components of intervention plan often include the goal setting, establishing clear and measurable learning goals that align with the learner's need, implementing targeted intervention and strategies to identified challenges, collaboration involving educators, parents and relevant professionals to work together in supporting the learner and periodically evaluating the effectiveness of the interventions and making changes to the plan if necessary.

Conclusions

The researchers arrived the following conclusion:

1. The level of the teachers' teaching proficiency in terms of Communication and Interpersonal Skills, Organization and Planning, Classroom Management, Assessment and Coaching, Collaboration and Teamwork, and Flexibility and Adaptability were proficient.
2. The level of grade 7 learner's academic performance in the following key learning areas: English, Mathematics; and Science were very satisfactory.

3. There is no significant relationship on the grade 7 learner's academic performance in the key learning areas English, Mathematics; and Science. Therefore, the null hypothesis is rejected.

4. There is no significant relationship between the level of the teachers' teaching proficiency and the grade 7 learners' academic. Therefore, the null hypothesis is accepted.

5. Teachers' continuing professional development plan is developed based on the findings, educators in the district to enhance their teaching competencies and contribute to sustained academic success of their learners. This comprehensive approach to professional development aligns with the goal of continually improving teaching practices to meet the evolving needs of students and educational standards.

Recommendations

According to the study's findings on teachers' teaching proficiency and grade 7 learner's academic performance in the 4th Congressional District of Quezon. The following recommendations are suggested:

1. The study revealed that the teachers surveyed generally exhibit a proficient level of teaching proficiency across various domains, including communication and interpersonal skills, organization and planning, classroom management, assessment and coaching, collaboration and teamwork, and flexibility and adaptability. Teachers should continue to participate in professional development programs to enhance their teaching proficiency, especially in areas where correlations with learner performance are weaker. This can help them continuously improve their skills. Thus, it is recommended to monitor individual learner progress. Implement systems for monitoring individual learner progress to identify and address potential learning gaps early, ensuring that all learners continue to excel.

2. The study revealed that the learner's academic performance in English, Mathematics, and Science is very satisfactory, with grand means falling within this range. This indicates that learners are achieving at a high level in these subject areas, which may be attributed to effective teaching practices and support.

3. The study revealed that the relationship between teachers' teaching proficiency and learner's academic performance reveals varying degrees of correlation in different domains. While some correlations are weak and do not reach statistical significance, there are noteworthy connections, such as the positive impact of organization and planning skills on English performance, and the positive influence of selecting team members appropriately on Mathematics performance. However, these relationships are subject-specific and may require further investigation to understand the underlying factors. Thus, it is recommended to explore subject-specific strategies: Investigate subject-specific teaching strategies that may have a more significant impact on academic performance. Teachers can then adapt their practices accordingly.

4. The study revealed that the teacher development plan is a structured and purposeful approach to improving teacher skills, knowledge, and effectiveness in the classroom. It involves setting specific professional goals, identifying areas for improvement, creating a roadmap for growth, and establishing timelines and resources to support the plan's implementation. On the other hand, the learner's intervention plan is designed to support individuals struggling with their learning. It includes setting clear and measurable learning goals, implementing targeted interventions, fostering collaboration among educators, parents, and professionals, and regularly evaluating the

effectiveness of the plan. These plans aim to provide tailored support to help learners overcome challenges and achieve their educational objectives. Thus, it is recommended to encourage the sharing of successful teacher development and intervention strategies among educational institutions to foster innovation and improvement across the education sector.

5. Future researchers should delve deeper into the specific factors and teaching methods that contribute to the positive correlations observed in certain areas. This can provide

valuable insights for instructional improvement. This suggests that these educators possess the necessary skills and competencies to effectively engage with learners in the classroom. Thus, it is recommended to encourage ongoing professional development. The plan should focus on targeted professional development in communication, interpersonal skills, classroom management, assessment techniques, and adaptability. Subject-specific pedagogical training is advised to capitalize on positive correlations between teaching proficiencies and learner performance in specific subjects. Workshops, collaborative learning communities, technology-enhanced instruction, and differentiated teaching methods should be emphasized. Ongoing professional development and support, including mentorship programs, aim to ensure continuous growth and improvement in teaching practices. These recommendations collectively aim to enhance teachers' competencies and contribute to sustained academic success for learners in the district.

Compliance with Ethical Standards

The researcher commits to respect the data privacy has laws and other rules indicated in the data privacy agreement memorandum from the Department of Education. All contacts will also be established prior to the study's conduct. The health and safety of the stakeholders as respondents will be taken into account by effective contact with the local IATF and adherence to safe health standards. In addition, accurate data interpretation with total impartially will be maintained in order to enhance the study's standard utilizing the confirmability approach or respondent validation via summary of results if they agree with any of the likely emerging viewpoints. Finally, the researcher is liable for any issues that may occur about the participants, gather data, or the integrity of the study.

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TECHNOLOGICAL PEDAGOGICAL AND CONTENT KNOWLEDGE NG KAGURUAN SA FILIPINO NG MGA PAMPUBLIKONG SENIOR HIGH SCHOOL SA NAGA CITY

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ABSTRAK

Nakatuon ang *Quantitative-descriptive* na pananalikisk na ito sa pagtukoy ng antas ng *kompetensi* sa *Technological Pedagogical and Content Knowledge* (*TPACK*) ng kaguruan sa Filipino ng mga pampublikong *SHS* sa Naga City. Gayundin ang pagtukoy sa mga salik na nakakaapekto sa *kompetensi* ng guro sa *TPACK*. Dagdag pa rito masagot makabuluhang pagkakaiba ng antas ng *kompetensi* sa *TPACK* at demograpikong salik gaya ng edad, taon sa pagtuturo, kasarian, at antas ng edukasyon. Panghuli, ang magpanukala ng programang magpapaunlad ng *kompetensi* ng kaguruan sa *TPACK*. Sinagot ang mga suliranin ng pananaliksik sa tulong ng *Self-assessment Questionnaire* na umikot sa pitong domeyn ng *TPACK*. Nilahukan ito ng buong populasyon ng kaguruan sa Filipino sa mga pampublikong *SHS* sa *Naga City*. Natuklasan ng papel na ito na mataas ang *kompetensi* ng kaguruan pagdating sa *CK*, *PK*, *PCK*, *TPK*, at *TPACK* habang katamtamang antas lamang sa *TK* at *TCK*. Natuklasan ding *Facilities at Infrastructure* ang nangungunang salik na nakakaapekto sa *TPACK* ng isang guro. Dagdag dito, natuklasang may makabuluhang pagkakaiba sa pagitan ng edad at *kompetensi* sa *TPACK*. Ang kaguruang may gulang na 29 pababa ay may mas mataas na *kompetensi* sa *TK* kompara sa mga gurong may edad 30 pataas. Walang natuklasang makabuluhang pagkakaiba sa pagitan ng ibang salik at *kompetensi* sa *TPACK* ng guro. Panghuli, natuklasang Seminar sa paggamit ng teknolohiya sa pagtuturo ang paksang sa tingin ng kaguruan ay magpapataas ng kanilang *TPACK* kung kaya't dito ibinatay ang nabuong programang ipinanukala ng mananaliksik na Sulong Edukalidad: Pagtataguyod ng *TPACK* sa Kaguruang Filipino.

Keywords: *Technological Pedagogical and Content Knowledge (TPACK), kompetensi, Kaguruan sa Filipino, Senior High School*

INTRODUKSIYON

Ang integrasyon ng teknolohiya lalo na sa larang ng edukasyon ang sinasabing unang hakbang sa pagpapaunlad ng sistema nito. Katunayan sa isang ulat na isinigawa ni Montemayor (2020), lumabas na 93% ng pampublikong paaralan sa Pilipinas ay may nakahandang *devices* para sa integrasyon ng teknolohiya sa mga paaralan. Iniisip ng karamihan na teknolohiya ang matagal nang hinihintay na solusyon sa problema sa edukasyon. Kung kaya't importanteng maipaliwanag at maunawaan nang mabuti ang konsepto ng *Technological Pedagogical Content Knowledge* o *TPACK (The TPACK Framework Explained, 2022)*. Kailangang maunawaan na ang teknolohiya ay katulong lamang o pansuporta sa pagkatuto ng mag-aaral.

Ang mas dumaraming pagsubok sa larang ng edukasyon ang nagsulong kina Mishra at Koehler (2006) na idagdag ang domeyn ng teknolohiya sa *Pedagogical Content Knowledge* (*PCK*) ni Shulman (1986). Dagdag dito, ang *TPACK* ay isang *framework* na nagbibigay-tuon sa kaalaman ng guro sa nilalaman o *Content Knowledge* (*CK*), pedagohiya o *Pedagogical Knowledge* (*PK*), at teknolohiya o *Technological Knowledge* (*TK*). Ang tatlong domeyn na ito ay masasabing may malaking inter-aksiyon sa loob ng klase kung magagamit nang matagumpay. Gaya ng dinamikong *TPK* (*technological pedagogical knowledge)* o ang pagsasanib-puwersa ng teknolohiya at pagtuturo, *PCK* (*pedagogical content knowledge*), at *TCK* (*technological content knowledge*). Kapag ito ay matagumpay na naisagawa ng isang guro masasabing siya ay eksperto sa pangkabubuoang pagtuturo angat sa mga eksperto lamang sa nilalaman, teknolohiya, at/o pedagohiya. Sinuportahan ito ng mga pag-aaral nina Thompson at Mishra (2008), Wang (2016), at Christopoulos, Conrad, at Shukla (2018) na tinalakay ang kaligiran ng *TPACK* at ang magandang dulot nito bilang ebalwasyon sa mga guro. Samantalang sa pananaliksik naman nina Herold (2016); Kainat et al. (2021); Koh at Divaharan. (2011), at Martin (2015) tinalakay ang kakulangan ng kaguruan sa *kompetensi* ng *TPACK* lalo na sa integrasyon ng teknolohiya na maaaring nag-ugat sa kung paano sila hinasa sa kolehiyo.

Sa papel nina Martin (2015), Ersanlı (2016), at Kusuma (2022) ipinaliwanag kung bakit dapat magkaroon ng *training* ang mga guro sa *TPACK*. Sa pag-aaral naman nina AIP (2017), Sojanah et al. (2021), Antony et al. (2019), Stewart et al. (2013), Ifinedo et al. (2020), Joo (2018), Kumala et al. (2022), Anzari et al. (2021), Mohd et al. (2018), Koh et. al (2010), Yuan (2023), Ozudogru et al. (2019), Castillo et al. (2018), Irvine (2018), at Bas at Senturk (2018) ipinaliwanag ang iba't ibang nakakaapektong salik at kung paano ito nakakaapekto sa *TPACK* ng isang guro gaya ng edad, taon sa pagtuturo, antas ng edukasyon, at kasarian.

Hindi maitatangging laganap na ang pag-aaral tungkol sa *TPACK* sa iba't ibang sulok ng mundo. Maraming mananaliksik (Kumala et al, 2022, Anzari et al, 2021, at Koh et al, 2010) ang nagsagawa ng ganitong klaseng pag-aaral. Gayunpaman, wala pang

gaanong pananaliksik tungkol dito kung kaguran sa Pilipinas ang pag-uusapan. Sa mabusising pagsasaliksik ng kaugnay na pag-aaral ay walang gaaanong pag-aaral ang nagpokus sa mga Filipinong tagatugon. Sa madaling sabi, wala pang ring nakakapagsagawa ng pananaliksik sa perspektiba ng mga Filipino partikular na sa kaguruang nagtuturo ng asignaturang Filipino.

Mga Suliranin ng Pag-aaral

Sa pagsasakatuparan nito, sinagot ng pag-aaral ang sumusunod na tanong:

1. Ano ang antas ng *kompetensi* ng kaguruan sa Filipino sa pitong domeyn ng *TPACK*? 2. Ano ang mga nakakaapektong salik sa *kompetensi* ng kaguruan batay sa *TPACK*?

3. Mayroon bang makabuluhang pagkakaiba sa antas ng *kompetensi* sa mga salik na nakakaapekto sa *kompetensi* ng kaguruan batay sa *TPACK*?

4. Ano ang mga programang mapapanukala sa pagpapataas ng *kompetensi* ng mga guro sa *TPACK*?

METODOLOHIYA

Ang kaguruan sa Filipino sa *SHS* sa mga pampublikong paaralan sa lungsod Naga ang *respondante* sa pananaliksik na ito. Kabilang sa mga paaralang ito ang *Camarines Sur National High School*, *Cararayan National High Schoo*l, *Tinago National High School*, *Naga City Science High School*, *Carolina National High School*, *Concepcion Pequeña National High School*, *Del Rosario High School*, at *Naga City School of Arts and Trade*. Ayon sa *Kagawaran ng Edukasyon*- Dibisyon ng Naga (2023), may kabuoang dalawampu't limang (25) guro sa asignaturang Filipino sa pampublikong *SHS* sa Lungsod ng Naga. Hindi na nagkaroon pa ng *sampling* dahil sa maliit na bilang ng populasyon kung kaya't sinakop ang kabuoang bilang nito. Makikita sa talahanayan sa ibaba ang buong populasyon ng kaguruan sa Filipino sa *Senior High School* sa Lungsod Naga.

Nagkaroon ng dalawang (2) hakbang ang pananaliksik na ito sa pagkalap ng datos. Ang unang hakbang ay ang preliminaryong pagkalap ng datos. Kasama na rito ang pagsulat ng liham sa *Kagawaran ng Edukasyon*-Dibisyon ng Naga, administrasyon ng mga kalahok na paaralan, at mga tagatugon upang humingi ng pahintulot sa pagsasagawa ng pananaliksik. Kasabay nito ang pangangalap ng iba pang impormasyon at kaugnay na literatura at pananaliksik. Ang ikalawang hakbang naman ay ang aktuwal na pagpapasagot ng talatanungan sa mga gurong kalahok sa pananaliksik.

Sineguradong may pahintulot sa administrasyon at sa mismong tagatugon bago isinagawa ang hakbang na ito. Ang talatanungang ibinigay sa guro ay *self-assessment* na nasagutan sa loob ng 15-30 minuto. Ang mananaliksik mismo ang nagsagawa ng pagbibigay ng talatanungan at *token* sa mga tagatugon. Sineguradong bukal sa kalooban ng guro ang pagsagot bago ibinigay ang talatanungan.

Sa pagkalap ng kailangang datos sa pananaliksik, nagsagawa ang mananaliksik ng talatanungang susukat sa antas ng *TPACK* ng kaguruan. Ang talatanungan ay sinagutan ng mga guro mismo. Hinango ito sa instrumentong ginamit nina SchimdtCrawford et al. (2009) sa kanilang pananaliksik sa pagsukat ng *TPACK* sa mga *preservice* na guro. Ang talatanungan ay binubuo ito ng 56 na aytem na nahati sa pitong domeyn ng *TPACK*. May tig-8 na aytem sa bawat domeyn. Idinagdag din sa talatanungan ang pag-alam sa mga nakakaapektong salik sa *kompetensi* ng *TPACK* ng isang guro gaya ng edad, kasarian, taon sa pagtuturo, at antas ng edukasyon. Ang mga nasabing talatanungan ay minodipika sa paraang aangkop sa pananaliksik. Ang talatanungan ay dumaan sa malalimang ebalwasyon. Sinagutan ang talatanungan sa paraang *five-level Likert Scale* para sa unang suliranin. Ibig sabihin, ang guro ay binigyang-kalayaan para pumili ng numerong aangkop sa kanilang karanasan batay sa sitwasyong ibinigay.

Matapos makalap ng mananaliksik ang mga datos, nasagot ang unang suliranin sa pamamagitan ngpagkuha ng *weighted mean.* Kinuha ang *weighted mean* ng bawat aytem. Matapos ito, kinuha ang *grand mean* ng lahat ng aytem na nabibilang sa partikular na domeyn. Ginamit ang talahanayan 2 sa pagkuha ng interpretasyon ng *grand mean*. Sa pag-analisa ng mga datos sa ikalawang suliranin, ginamit ang *frequency count* at *percentage*. Sa ikatlong suliranin, sa pagkuha ng resulta sa edad, kasarian at taon sa pagtuturo, ginamit ang *t-test* na may 1% *level of significance*. Ayon kay Lani (2021), ginagamit ang *t-test* kapag ang tagatugon ay mas mababa sa bilang na 30. Sa pagkuha ng resulta sa antas ng edukasyon, ginamit ang *Analysis of Variance (ANOVA)* na may 1% *significance level* para malaman kung may makabuluhang pagkakaiba sa mga antas ng edukasyon. Sa panghuling suliranin, ginamit ang *frequency count* at *percentage* para matukoy ang programang sa tingin ng guro ay makakatulong sa pagpapataas ng kanilang *kompetensi* sa *TPACK*.

Sakop ng pananaliksik ang pagtukoy sa antas ng *kompetensi* sa *TPACK* ng kaguruan sa Filipino sa mga pampublikong *SHS* sa Lungsod Naga, ang pagtukoy sa mga nakakaapektong salik sa kanilang *kompetensi* sa *TPACK*, ang paglinaw kung may makabuluhang pagkakaiba ng demograpikong salik ng guro at *kompetensi* sa *TPACK*, at makapagpanukala ng mga programang mag-aangat sa kanilang *kompetensi*. Katakdaan ng pag-aaral na itong hindi masakop ang mga gurong nagtuturo sa *JHS* ng mga pampublikong paaralan at mga gurong nasa *SHS* sa mga pribadong paaralan. Hinimok na maging matapat sa pagsagot sa talatanungan ngunit hindi maiiwasang magkaroon ng pagkiling sa pagsagot nito.

RESULTA

Antas ng *Kompetensi* sa Pitong Domeyn ng *TPACK* ng Kaguruan sa Filipino

Sa bahaging ito inilahad ang resulta ng antas ng *kompetensi* sa pitong domeyn ng *TPACK* ng kaguruan sa Filipino ng mga pampublikong *SHS* sa *Naga City*.

Talahanayan 1. *Kompetensi* sa Pitong Domeyn ng *TPACK* ng mga Guro

Domeyn	Resulta	Interpretasyon
Technological Pedagogical Content Knowledge	4.07	MT
Content Knowledge	3.84	MT
Technological Pedagogical Knowledge	3.81	MT
Pedagogical Knowledge	3.75	MT
Pedagogical Content Knowledge	3.72	MT
Technological Content Knowledge	3.39	K
Technological Knowledge	3.37	K

Tanda:
Napakataas(NPT)- 4.2-5, Mataas(MT)- 3.40-4.19, Katamtaman(K)- 2.6-3.39, Mababa(MB)- 1.80-2.29, Napakababa(NPB)- 1-1.79

Mga Nakakaapektong Salik sa *Kompetensi* ng Kaguruan sa *TPACK*

Sa bahaging ito, inilahad ang resulta ng nakalap na datos tungkol sa mga nakakaapektong salik sa *kompetensi* ng kaguruan sa kanilang *TPACK*.

Talahanayan 2. Mga Nakakaapektong Salik sa *TPACK* ng Guro

Salik	Bilang ng Gurong Sumang-ayon	Bahagdan
Facilities and Infrastructure	20	80%
Karanasan sa Pagtuturo	15	60%
Motibasyon sa Pagtuturo	10	40%
Self-efficacy	8	32%
Interes	7	28%

Makabuluhang Pagkakaiba sa Antas ng *Kompetensi* sa *TPACK* sa mga Salik A. Edad

Matapos ang masusing pagkalap ng mga datos, ipinakita sa Talahanayan 5 ang resulta ng *Independent t-test* sa edad at sa antas ng *kompetensi* sa bawat domeyn ng *TPACK* na may 1% *significance level*.

Talahanayan 3. Resulta ng *t-test* sa Edad at *Kompetensi* sa Bawat Domeyn ng *TPACK*

		Mean	SD	t	df	P (twotail)	Resulta
TK	E	33.6	11.13	13.57	24	9.4E-13	Reject
	K	3.37	0.4231				
CK	E	33.6	11.13	13.37	24	1.3E-12	Reject
	K	3.835	0.30982				
PK	E	33.6	11.13	13.40	24	1.2E-12	Reject
	K	3.75	0.39				
PCK	E	33.6	11.13	13.42	24	1.2E-12	Reject
	K	3.715	0.36				
TCK	E	33.6	11.13	13.56	24	9.5E-13	Reject
	K	3.39	0.43				

TPK	E	33.6	11.13	13.38	24	1.3E-12	Reject
	K	3.81	0.38				
TPACK	E	33.6	11.13	13.26	24	1.5E-12	Reject
	E	4.07	0.46				

Tanda: E- Edad, K- Kompetensi

Talahanayan 4. Resulta ng *Independent T-test* sa *Kompetensi* sa Bawat Domeyn ng *TPACK* at A*ge Bracket*

Domeyn		**Mean**	**SD**	**t**	**df**	**P (onetail)**	**Resulta**
TK	29 pababa	3.55	0.32	2.84	16	<0.01	R
	30 pataas	3.1	0.43				
CK	29 pababa	3.91	0.23	1.38	13	0.10	DNR
	30 pataas	3.73	0.39				
PK	29 pababa	3.78	0.43	0.54	22	0.30	DNR
	30 pataas	3.7	0.34				
PCK	29 pababa	3.74	0.42	1.93	28	0.03	DNR
	30 pataas	3.43	0.46				
TCK	29 pababa	3.43	0.46	0.64	22	0.27	DNR
	30 pataas	3.32	0.39				
TPK	29 pababa	3.83	0.37	0.44	18	0.33	DNR
	30 pataas	3.76	0.41				
TPACK	29 pababa	4.2	0.47	1.87	22	0.04	DNR

	30 pataas	3.88	0.39				

Tanda: R-Reject, DNR- Do not reject

B. Antas ng Edukasyon

Sa aspekto ng antas ng edukasyon, nagkaroon ng 25 na tagatugon na hinati sa iba't ibang pangkat: *Bachelor's Degree (n=5)*, *Master's Degree w/ units (n=13)*, *Master's Degree Graduate (n=5)*, at *Doctorate Degree Graduate (n=2).*

Talahanayan 5. Resulta ng *ANOVA* ng Bawat Domeyn ng *TPACK* at Antas ng Edukasyon

		Sum of Squares	df	Mean Squares	F	Sig.
TK	*BG*	0.22	3	0.07	0.37	0.77
	WG	4.080	21	0.19		
	Kabuoan	4.30	24			
CK	*BG*	0.24	3	0.08	0.82	0.49
	WG	2.06	21	0.09		
	Kabuoan	2.30	24			
PK	*BG*	0.39	3	0.13	0.81	0.50
	WG	3.33	21	0.16		
	Kabuoan	3.72	24			
PCK	*BG*	1.058	3	0.35	3.56	0.03
	WG	2.08	21	0.09		
	Kabuoan	3.14	24			
TCK	*BG*	0.70	3	0.23	1.35	0.29
	WG	3.65	21	0.17		
	Kabuoan	4.35	24			
TPK	*BG*	0.16	3	0.05	0.34	0.79
	WG	3.33	21	0.16		
	Kabuoan	3.50	24			

TPACK	*BG*	0.66	3	0.22	1.05	0.39
	WG	4.43	21	0.21		
	Total	5.09	24			

Tanda: *Between Groups- BG, Within Groups- WG*

C. Taon sa Pagtuturo

Sa demograpikong salik naman na Taon sa pagtuturo, sinagot ito ng buong populasyon ng Kaguruan sa Filipino ng mga pampublikong *SHS* sa *Naga City*. Sa pagsagot kung may makabuluhang pagkakaiba sa pagitan ng taon sa pagtuturo at antas ng *kompetensi* sa pitong domeyn ng *TPACK* ginamit ang *t-test for independent samples* na may *1% significance level*.

Talahanayan 6. Resulta ng *Independent t- t-test* sa Taon sa Pagtuturo sa *DepEd* at *Kompetensi* sa Bawat Domeyn ng *TPACK*

		Mean	**SD**	**t**	**df**	**P (twotail)**	**Resulta**
TK	T	8.28	8.93	2.75	24	0.01	Do not reject
	K	3.37	0.42				
CK	T	8.28	8.93	2.49	24	0.02	Do not reject
	K	3.835	0.31				
PK	T	8.28	8.93	2.53	24	0.02	Do not reject
	K	3.75	0.39				
PCK	T	8.28	8.93	2.55	24	0.02	Do not reject
	K	3.715	0.36				
TCK	T	8.28	8.93	2.73	24	0.12	Do not reject
	K	3.39	0.43				

TPK	T	8.28	8.93	2.50	24	0.02	Do not reject
	K	3.805	0.38				
TPACK	T	8.28	8.93	2.35	24	0.03	Do not reject
	K	4.07	0.46				

Tanda: T- Taon sa DepEd, K- Kompetensi,

D. Kasarian

Sa aspektong kasarian, nagkaroon ng dalawang pangkat ang mga tagatugon: Lalaki (*n=6*) at Babae (n=*19*). Isinagawa ang *t-test for independent samples* na may *1% significance level* para sa pag-analisa ng datos. Nailahad ng Talahanayan 9 ang resulta ng *t-test*.

Talahanayan 7. Resulta ng *Independent t-test* sa Lalaki Kontrast sa Babae sa Bawat Domeyn ng *TPACK*

		Mean	SD	t	df	P (twotail)	Resulta
TK	L	3.33	0.41	-0.25	9	0.81	DNR
	B	3.38	0.42				
CK	L	3.81	0.38	-0.18	7	0.87	DNR
	B	3.84	0.29				
PK	L	3.89	0.31	1.21	11	0.25	DNR
	B	3.70	0.41				
PCK	L	3.94	0.39	1.65	7	0.14	DNR
	B	3.64	0.33				
TCK	L	3.38	0.38	-0.11	10	0.92	DNR
	B	3.39	0.45				
TPK	L	3.75	0.5	-0.33	7	0.75	DNR
	B	3.82	0.35				
TPACK	L	3.98	0.45	-0.56	9	0.59	DNR

	B	4.09	0.47				

Tanda: L- Lalaki, B- Babae, DNR- Do not reject

Programang Mapapanukala sa Pagpapaunlad ng *Kompetensi* sa *TPACK*

Sa bahaging ito inilahad ang resulta ng nakalap na datos tungkol sa mga paksang maaaring magpaunlad ng *kompetensi* sa *TPACK*.

Makikita sa Talahanayan 11 ang naging tugon ng 25 guro tungkol sa ikaapat na suliranin. Nagbigay ng apat (4) na espesipikong paksa mananaliksik na pagpipilian ng mga tagatugon habang dalawa (2) naman ay suhestiyon kung paano matutulungang mapaunlad ang kanilang *TPACK* na pinagbatayan ng programang ipapanukala. Binigyan din ng pagkakataon ang kaguruang magbigay ng kanilang sariling rekomendasyon ukol dito.

Talahanayan 8. Mga Paksa at Suhestiyong Magpapaunlad ng *Kompetensi* sa *TPACK*.

Programa/ Suhestiyon	**Bilang ng Gurong Sumangayon**	**Bahagdan**
Seminar sa Paggamit ng Teknolohiya sa Pagtuturo	23	92%
Seminar sa Kagamitang Panturo	19	76%
I-improve ang F*acilities* ng Paaralan	19	76%
Seminar sa Pagtuturo ng Filipino sa SHS	17	68%
Pagbibigay ng mas Maraming Oportunidad sa Paggamit ng Teknolohiya sa Pagtuturo	16	64%

Seminar sa *Classroom Management*	12	48%

Batay sa nakalap na resulta, nabuo ng mananaliksik ang programang Sulong Edukalidad: Pagtaguyod sa TPACK ng Kaguruang Filipino. Ito ay tatlong araw ng seminar at worksyap para sa mga guro sa Filipino at mga punong-guro ng mga pampublikong paaralan sa Lungsod Naga.

Talahanayan 9. *Action Matrix* ng Panukalang Programa

Oras	Gawain	In-charge
Day 1- July 15, 2023		
8:00- 9:00 am	Registration	Working Staff
9:01 am – 10:00 am	Opening Program	
10:00 am – 12:00 nn	Ang Mag-aaral Ngayon (21st Century Learners)	**Czar Kenneth J. Dela Roca** Faculty, De La Salle Santiago Zobel School
LUNCH BREAK		
1:00 am - 3:00 nn	Kagamitang Panturo sa Makabagong Panahon	**Mavreen Romero-Camacho** Department Chair, AVFX Senior High School Ateneo de Naga University
3:00 pm – 5:00 pm	Paggamit ng Teknolohiya sa Pagtuturo ng Filipino	**King Albert Nerveza** Master Teacher Rizal High School SDO-Pasig City
Day 2 – July 16, 2024		

8:00 am – 10:00 am	Pagtuturo ng Filipino sa Makabagong Mag-aaral	**Dr. Vasil Victoria** Associate Professor II Ateneo de Naga University
10:00 am – 12:00 nn	Pagbabahagi ng Best Practices ng Bawat Paaralan	**Mga Punong guro**
LUNCH BREAK		
1:00 pm – 3:00 pm	Workshop	**Maria Cleofe J. Olleta** Teacher II, Naga City School of Arts and Trade
3:00 pm – 5:00 pm	Critiquing	**Maria Cleofe J. Olleta** Teacher II, Naga City School of Arts and Trade
Day 3 – July 17, 2024		
8:00 am – 12:00nn	Pakitang-turo	**Maria Cleofe J. Olleta** Teacher II, Naga City School of Arts and Trade
LUNCH BREAK		
1:00pm – 3:00pm	Paggawad ng Sertipiko	**Maria Cleofe J. Olleta** Teacher II, Naga City School of Arts and Trade

PAGTALAKAY

Makikita sa Talahanayan 1 ang kompetensi ng kaguruan sa bawat domeyn ng *TPACK.* May kabuoang 25 guro sa Filipino sa mga pampublikong *SHS* sa *Naga City*. Ang buong populasyon ay nakuhaan ng datos ng manaliksik. Mapapansing halos lahat ng domeyn ay nagresuta sa mataas na *kompetensi* samantalang dalawang (2) domeyn naman ang nasa katamtamang antas lamang. Mapapansing ang domeyn na *TPACK* ang nakakuha ng pinakamataas na resulta na 4.07 na ang ibig sabihin ay mataas na kompetensi o 75% ng katangian ay taglay o naisagawa habang ang pinakamababa

naman ay ang *Technological Knowledge* na nakakuha ng 3.37 o katamtamang antas lamang. Ibig sabihin nito ay 50% ng mga katangian ay taglay o naisagawa niya. Gayunpaman, walang domeyn ang nakakuha ng napakataas na antas ng *kompetensi*.

Ang resulta ay maaaring maging daan upang mas pag-usapan ang estado ng ating mga pampublikong paaralan at guro. Maaaring ang mga guro ay may mataas na *kompetensi* sa *TPACK* dahil sa naging ilang programa ng Kagawaran ng Edukasyon gaya na lamang ng *Personal Computer for Public Schools Program* simula 2002 hanggang 2012 kung saan 61, 554 na kompyuter ang ibinigay sa 5, 028 na pampublikong paaaralan kasama na ang ilang pampublikong paaralan sa Lungsod Naga. 52, 000 na guro mula sa 5, 028 na guro naman ang napasali sa *training* (Department of Trade and Industry, 2020). Bagama't mataas ang *kompetensi* sa TPACK ay hindi ito sapat dahil kailangang mapagtibay ang lahat ng domeyn bago masabing ang isang guro ay mahusay sa *Technological Pedagogical and Content Knowledge* (Thompson at Mishra, 2008).

Sa kabilang banda, pinakamababang domeyn na nakuha ng guro ay ang *Technological Knowledge* kung saan taliwas ito sa inaasahang resulta ng *Personal Computer for Public Schools Program* at *DepEd Computerization Program*. Ayon sa Department of Trade and Industry (2020) higit sa 490 milyon ang alokasyon ng gobyerno upang mapagtibay ang mga programang ito ngunit tila kinapos pa rin upang pataasin ang kaalaman ng guro pagdating sa teknolohiya. Maaaring ang mga gurong napabilang sa mga tagatugon ay hindi nakasama sa mga programang ito lalo na't 2016 lamang nagkaroon ng *SHS* ngunit sa ulat naman ni Montemayor (2020) 385, 471 na guro mula sa mga pampublikong paaralan ang sumailalim sa *ICT-based teaching training* simula Abril hanggang Hunyo 2020. Maaaring hindi rin naramdaman ng kaguruan ang mga hakbang ng kagawaran o maaaring hindi ulit nakasali ang mga tagatugon sa mga *training* na ito.

Ang resulta sa unang suliranin ay sumusuporta sa ilang pananaliksik gaya ng pag-aaral nina Kainat et al. (2021) na limitado pa rin ang kaalaman ng mga guro sa teknolohiya kontrast sa ibang domeyn ng *TPACK*. Gayundin sa pag-aaral nina Koh at Chai (2011) na kadalasang nakokonekta lamang ng guro ang kanilang *TK* sa *PK* kaya napag-iiwanan ang *CK*. Kung babalikan ang resulta sa itaas, malinaw na malinaw na may mataas na *kompetensi* ang mga guro sa *TPK* ngunit katamtaman lamang sa *TCK*. Kapansin-pansing nasa katamtamang antas lamang ang *kompetensi* ng guro kapag teknolohiya ang pinag-uusapan kahit na ayon kina Ruggiero at Mong (2015) nakikita ng karamihan kasama na ang mga estudyanteng ang malaking pangangailangan sa teknolohiya sa loob ng paaralan.

Ibig sabihin, may mga kailangan pa ring paunlarin ang mga guro upang mas mapataas ang kanilang *kompetensi*, isang bagay na mahigpit na sinuportahan ng pagaaral. Ang resultang ito ay sumusuporta sa teoryang *CFTK* nina Ronau et al. (2009) na ang bawat domeyn ay magkakakonekta na kailangang paunlarin upang mas mapaigting ang pagtuturo. Maaaring agarang mapaunlad ang isang domeyn at mapag-iwanan ang isa ngunit kailangang pagtrabahuhan ito ng guro.

Sa Talahanayan 2 makikita ang naging tala ng resulta sa mga nasabing salik. Ito ang naging tugon ng buong populasyon ng kaguruan sa Filipino ng mga pampublikong *SHS* sa *Naga City*. Ang mga salik na ito ay ang sumusunod: Karanasan sa Pagtuturo, Motibasyon sa Pagtuturo, *Self-efficacy*, *Facilities* at Imprastraktura, at Interes.

Pinakamataas na bilang ng tugon ang *Facilities* at *Infrastructure*, 20 sa 25 na guro o 80% ng kaguruan sa Filipino sa pampublikong SHS sa Naga City ang naniwalang ang salik na ito ang pinakanakakaapekto sa kanilang *kompetensi* sa *TPACK*. Habang panghuli naman ang Interes na nakakuha lamang ng 7 tugon o 28% ng buong populasyon.

Ang naging resulta ay nangangahulugang pinakanakakaapektong salik sa *kompetensi* ng guro ay ang *Facilities* at *Infrastructure*. Ito ang pinakakailangang matutukan ng Kagawaran ng Edukasyon dahil ito ang pinakanakikitang butas ng kaguruan upang makamit ang pinakamataas na nibel ng *kompetensi*. Ang resultang ito ay may malaking kaugnayan sa naging resulta ng naunang suliranin kung saan katamtaman lamang ang *kompetensi* ng guro sa *TK* at *TCK*. Hindi maipagkakailang maaaring nag-ugat ito sa kakulangan sa *Facilities* at *Infrastructure*. Nakakabigla ang ganitong resulta ng tugon lalo na't determinado ngayon ang Kagawaran ng Edukasyon ibigay ang magandang kalidad ng edukasyon kahit na sa malalayong paaralan sa pamamagitan ng MATATAG *Agenda* (*DepEd Presents Reforms for MATATAG Basic Education*, n.d.). Bahagi ng kurikulum na ito ang *School Infrastructure and Facilities strand* (*SIF*) kung saan ang pokus ay paunlarin ang imprastruktura at pasilidad ng mga pampublikong paaralan. Maaaring hindi naramdaman sa mga paaralang kinabibilangan ng mga tagatugon ang programang ito kung kaya't ganito ang naging resulta. Kaugnay nito, kapansin-pansin din ang kakulangan ng sapat na pasilidad at imprastruktura ng mga pampublikong paaralan ang maaaring nakaapekto kung bakit katamtaman lamang ang antas ng *kompetensi* sa *TK* at *TCK* na domeyn ng kaguruan sa Filipino taliwas ito sa naging ulat ni Montemayor (2020) na 93% ng pampublikong paaralan sa bansa ay may nakahandang *devices* para sa integrasyon ng teknolohiya sa pagtuturo. Ipinahayag sa kaniyang ulat na 1,042,575 na *devices* ang ipinagkaloob sa 43, 948 na pampublikong paaralan sa buong bansa. Malinaw na malinaw na kailangan pa rin itong mas paigtingin dahil tila ito ang pinakanakikitang butas ng kaguruan sa Filipino sa *SHS* ng mga pampublikong paaralan sa Naga City sa hindi kataasang *kompetensi* sa *TPACK*.

Ang naging resultang ito ay sumusuporta sa pag-aaral nina Sojanah et. al (2021) kung saan lumabas din ang halos parehong mga salik na sinasabing nakakaapekto sa *TPACK* ng isang guro. Ang kanilang pag-aaral ay nilahukang ng 472 guro sa *Economics* habang ang datos naman inalisa gamit ang *Structural Equation Modeling* samantalang ang pananaliksik na ito ay tinugunan lamang ng 25 na guro sa buong Lungsod Naga. Sumusuporta rin ang pananaliksik na ito sa *Theory of Teacher Competence* ni Medley (1977) na ang *kompetensi* ng guro ay maaaring maapektuhan ng mga panloob at panlabas ng salik. Ang mga panloob na salik ay kinabibilangan ng mga *self-efficacy*, motibasyon, at interes habang ang *facilities and infrastructure* naman ay nabibilang sa panlabas na salik.

Makikita sa Talahanayan 3 na *reject* ang *null hypothesis* ibig sabihin lamang nito na may makabuluhang pagkakaiba sa pagitan ng edad at antas ng *kompetensi* sa *TPACK*.

Ang resultang ito ay maaaring maikonekta sa panahong kinagisnan ng mga guro at ang sistema ng edukasyong kinabilangan. Ang kurikulum ng mga mas nakakatandang henerasyon ay iba kung ikokontrast sa mas makabagong kurikulum na kinagisnan ng mas nakakabatang mga guro. (Glavin, n.d.). Ang kurikulum bago ang K-12 ay may mga asignaturang may kinalaman sa teknolohiya kung kaya't kahit papaano ay may kaligiran na sa teknolohiya ang mas batang guro.

Pagdating naman sa pinag-aralan sa kolehiyo, ang mga naunang guro ay nakapokus sa *PCK* ni Shulman (1987) kung saan pinapanday ng guro na mas mapaghusay ang kaniyang kaalaman at ang kasanayan sa pagtuturo. Kaiba ito sa mga nakagisnan ng mga mas batang guro na *TPACK* nina Mishra at Koehler (2006) kung saan malaking tipak sa kabuoan ng isang guro ang kaalaman at kasanayan sa integrasyon ng teknolohiya sa pagtuturo. Isa ito sa nakikitang dahilan kung bakit nagkaroon ng makabuluhang pagkakaiba sa pagitan ng edad at antas ng kompetensi sa pitong domeyn ng *TPACK*.

Para mas lalong mapalalim ang pag-aaral sa makabuluhang pagkakaiba ng edad at antas ng *kompetensi* sa bawat domeyn ng *TPACK,* hinati sa dalawang (2) *age bracket* ang mga tagatugon: mga gurong may edad na 29 pababa at 30 pataas.

Matapos hatiin ang sa dalawang *age bracket* ang grupo ng mga guro, makikita sa Talahanayan 4 na *reject* ang resulta sa *TK* habang *do not reject* naman sa ibang domeyn ng *TPACK*. Batay sa resulta ng mga datos, natuklasang mas mataas ng *kompetensi* sa *TK* ng mga gurong may edad na 29 pababa *(M=3.55, SD=0.319738)* kontrast sa kaguruang may edad na 30 pataas *(M=3.1, SD=0.428174) condition t(16)=2.83762, p=0.000594*. Samantala, walang natuklasang pagkakaiba sa ibang domeyn ng *TPACK*.

Kung sa gayon, higit na mas mataas ng *kompetensi* ng mga gurong may edad 29 pababa kaysa mga gurong may edad 30 pataas lalo na sa domeyn na *TK*. Ang natuklasang ng pananaliksik ay sumusuporta sa pag-aaral nina Kumala et al. (2022) na ang gurong may edad na 29 pababa ay mas mahusay sa paggamit ng teknolohiya. Sinuportahan din ng papel na ito ang pag-aaral nina Anzari et al. (2021) na may mataas na magaling na abilidad at kaalaman ang mga gurong may edad 29 pababa sa apektong teknolohiya. Napag-iiwanan ng mga gurong mas bata ang matatanda sa kompetensing may kinalaman sa teknolohiya (Koh et al., 2010).

Maiuugnay ito na ang grupong ito ay nabibilang sa *Millenials* na ipinanganak kasabay ng pag-usbong ng makabagong teknolohiya habang ang kabilang grupo naman ay nabibilang sa *Generation X* at *Boomers*. Marahil ito ang naging dahilan kung bakit mas maalam sa teknolohiya ang mas nakakabatang guro kaysa mas matatanda. Sinuportahan ng pananaliksik na ito ang pag-aaral nina Calvo-Porral at PesqueirraSanchez (2019) na ang *exposure* sa teknolohiya ang dahilan kung bakit mas

hasa sa teknolohiya ang *millennial* kaysa *Generation X* at *Boomers*. Maiuugnay rin ito sa naging sanligan noon sa edukasyon na *PCK* ni Shulman (1987) na mas nakapokus noon ang mga nakakatandang guro sa pagpapaunlad ng pedagohiya at kaalaman kontrast sa kahingian sa mas makabagong guro na ang kinagisnan na ay *TPACK*.

Ginamit ang *One-way Analysis of Variance (ANOVA)* para makita kung may makabuluhang pagkakaiba ang bawat grupo ayon sa domeyn gamit ang *1% significant difference*. Makikita sa Talahanayan 5 ang naging resulta ng isinagawang pananaliksik. Inisa-isa ang bawat domeyn ng *TPACK* at nakitang walang makabuluhang pagkakaiba sa pagitan ng mga domeyn at antas ng *kompetensi* ng mga guro.

Maaaring resultang ito ay nag-ugat dahil sa iba-ibang kursong tinapos ng mga tagatugon. Hindi lahat ng tagatugon ay talagang nagtapos ng *Education* bilang kanilang kurso sa kolehiyo. Hindi rin lahat ng tagatugon ay talagang medyor sa Filipino. Ang ilan sa kanila ay pinagturo lamang ng Filipino sa *SHS* dahil sa kakulangan ng guro o sa sobrang bilang ng mga mag-aaral.

Salungat ito sa naging resulta ng pag-aaral nina Bas at Senturk (2018) na ang mga gurong may *post graduate degree* ay may mataas na *kompetensi* sa *TPACK* kung ikokontrast sa mga gurong may *undergraduate degree*. Maaaring nagkasalungat ang resulta ng pag-aaral na ito sa nabanggit na pananaliksik dahil espesipiko ang pagtukoy ng antas ng edukasyon ng mga tagatugon sa papel na ito kung ikokontrast sa papel nina Bas at Sentruk.

Makikita sa Talahanayan 6 ang *Do not reject* na resulta sa lahat ng domeyn. Ibig sabihin nito, walang makabuluhang pagkakaiba sa pagitan ng taon sa pagtuturo at *kompetensi* sa pitong domeyn ng *TPACK*. Sa madaling sabi, hindi naaapektuhan ng taon ng pagtuturo sa *DepEd* ang *kompetensi* ng guro sa iba't ibang domeyn ng *TPACK*.

Ang resultang ito ay maaaring nag-ugat sa paulit-ulit na asignaturang itinuturo ng guro kahit na sinasabing siya ay matagal na sa serbisyo. Maaaring sabihin na dapat napaghusay na rin ang pedagohiya pero kung paulit-ulit ang ginagamit na estratehiya sa pagtuturo ay maaari pa ring mapag-iwanan. Dito na rin papasok ang kakulangan ng *training* o programa para sa kaguruan. Sa ulat ni Montemayor (2020) 385,471 ang mga gurong nakasali sa kanilang *training* mula Abril hanggang June 2020 ngunit hindi maipagkakailang masyadong maliit ang bilang na ito sa kontrast sa buong populasyon ng guro sa bansa. Ang naging resulta ay sumuporta sa pag-aaral nina Yuan et al. (2023) na walang makabuluhang ugnayan sa pagitan ng bilang ng taon sa pagtuturo at kompetensi sa *TPACK*.

Kontrast ito sa naging resulta ng pag-aaral nina Kumala et al. (2022) na mas mataas ang kompetensi sa TPACK ng mga gurong may 5-10 taon sa pagtuturo kaysa mga gurong mas matanda na sa serbisyo. Maaaring nagkaroon ng salungat na resulta dahil sa magkaibang bilang ng tagatugon at magkaibang instrumentong ginamit sa

pananaliksik. Gayunpaman, natuklasan ng pananaliksik sa ito na walang makabuluhang pagkakaiba ang bilang ng taon sa serbisyo o pagtuturo at antas ng *kompetensi* sa *TPACK*.

Makikita sa Talahanayan 7 na *Do not reject* ang resulta sa lahat ng domeyn ng *TPACK*. Batay sa resultang ito, walang makabuluhang pagkakaiba sa pagitan ng kasarian at *kompetensi* sa pitong domeyn ng *TPACK*. Ibig sabihin nito, walang kinalaman ang kasarian upang mapaunlad ang *kompetensi* ng isang guro.

Ang ganitong resulta ay nagpapahiwatig lamang ng pantay na edukasyon ng mga kasarian. Marahil walang nakalamang sa *kompetensi* dahil sa parehong kurikulum na sinusunod ng mga pamantasan. Walang espesyal na asignaturang ibinibigay sa bawat kasarian kung kaya't pareho lamang ang kasanayan.

Ang natuklasan ng pananaliksik na ito ay sumusuporta sa pag-aaral nina Ozudogru et al. (2019) at Koh at Chai. (2011), walang kinalaman ang kasarian sa *kompetensi* sa *TPACK* ng isang guro. Sinuportahan din nito ang pag-aaral ni Yuan (2023) na walang kaugnayan ang bilang ng taon sa pagtuturo at kasarian ng isang guro sa kanilang kasanayan pagdating sa *TPACK*.

Batay sa result ana makikita sa Talahanayan 8, pinakakailangan ng guro ang Seminar sa Paggamit ng Teknolohiya sa Pagtuturo upang mapataas ang kanilang *kompetensi* sa *TPACK*. Maiuugnay pa rin ang naging resulta nito sa resulta ng unang suliranin kung saan may katamtamang antas lamang kompetensi ang guro sa *TK* at *TCK*. Hindi maipagkakaila ang malaking ugnayan ng mga resultang ito. Maiuugnay rin ang naging resulta sa ikalawang suliranin kung saan *facilities* at *infrastructure* ang pinakanakakaapektong salik. Makikita sa naging resulta sa talahanayan na 19 sa 25 na guro ang naniniwalang kailangan i-improve ang *facilities* ng paaralan. Batay sa resultang ito, maikokonekta ang mga hamon ng isang guro sa pagpapaunlad ng kanilang sarili.

Ang mga nakalap na resulta ay sumusuporta sa pag-aaral nina Barak (2014) at Morsink et al. (2010) na kailangan ng guro ng sapat na kasanayan at pagbubukas ng mas maraming opurtunidad para sa kaguruan sa pagpapaunlad ng kanilang *TPACK*. Sinuportahan din nito ang *Theory of Teacher Competence* ni Medley (1977) na kailangan din ng mga panlabas na tulong upang mapataas ang kasanayan ng isang guro lalo na't nakasalalay pa rin sa kaalaman ng guro ang pagkatuto ng mag-aaral.

Batay sa nakalap na resulta, nabuo ng mananaliksik ang programang Sulong Edukalidad: Pagtaguyod sa TPACK ng Kaguruang Filipino. Ito ay tatlong araw ng seminar at worksyap para sa mga guro sa Filipino at mga punong-guro ng mga pampublikong paaralan sa Lungsod Naga.

Kongklusyon

Ang pag-aaral na ito ay nagbigay-kasagutan sa *TPACK* ng kaguruan sa Filipino sa mg pampublikong *SHS* sa Naga City. Ninais ng pag-aaral na masagot ang mga tanong sa pananaliksik.

Natukoy na mataas ang antas ng *kompetensi* sa *TPACK* ng kaguruan sa Filipino sa limang domeyn nito – *Content Knowledge*, *Pedagogical Knowledge*, *Pedagogical Content Knowledge*, *Technological Pedagogical Knowledge*, at *Technological Pedagogical Content Knowledge*. Samantalang nakakuha naman ng katamtamang antas lamang ang mga domeyn na *Technological Knowledge* at *Technological Content Knowledge*.

Ang resultang ito ay maiuugnay sa naging resulta sa ikatlong suliraning kung saan may mataas na *kompetensi* sa *TK* ang mga gurong may edad na 29 pababa kontrast sa gurong may edad 30 pataas. Sa madaling sabi, natukoy rin na may makabuluhang pagkakaiba sa pagitan ng *kompetensi* sa *TPACK* at edad ng isang guro. Samantalang walang natuklasang makabuluhang pagkakaiba sa antas ng edukasyon, taon sa pagtuturo, at kasarian.

Ang katamtamang antas lamang sa *TK* at *TCK* ng kaguruan ay maiuugnay rin sa naging resulta ng ikalawang suliranin na ang *Facilities* at *Infrastructure* ang nangungunang salik na nakakaapekto sa kanilang *kompetensi* kung kaya't nag-iwan ito ng palaisipan kung gaano kahanda ang Kagawaran ng Edukasyon sa integrasyon ng teknolohiya sa pagtuturo.

Sa huli, pinagbatayan ng mananaliksik ang naging resulta sa mga paksa at suhestiyon sa pagpapaunlad ng *TPACK* upang mabuo ang Sulong Edukalidad: Pagtataguyod ng TPACK sa Kaguruang Filipino.

Rekomendasyon

Mula sa mga kongklusyon, narito ang mga rekomendasyon ng pananaliksik:

Sa mga guro, maaaring dumalo sa mga seminar o palihan na mas magpapaigting ng *kompetensi* sa *TPACK* lalo na sa aspektong panteknolohiya. Mabilis ang pag-usad ng panahon kung kaya't dapat makasabay sa mga hamon nito. Pumili ng mga palihang mas makakatulong lalo na sa *Technological Knowledge* at *Technological Content Knowledge*.

Sa mga administrador at Kagawaran ng Edukasyon, maaaring dinggin ang pangangailan ng kaguruan. Maaaring magsagawa ng mga seminar na dadaluhan ng lahat guro. Bigyan sila ng oras at pagkakataong dumalo sa mga seminar na magpapaunlad ng kanilang *kompetensi*. Maaari ding gamiting pagkakataon ang *InService Training* ng mga guro para sa mga seminar na ito at maghanap ng magagaling

na tagapagsalita. Suportahan din ang pangangailangan ng mga pampublikong paaralan lalo na sa usaping *facilities* at *infrastructure* dahil ito ang pinakanakikitang pagsubok ng kaguruan sa kanilang pagpapaigting ng *kompetensi*. Maaari ding gumawa ng polisiyang hihikayat sa mga guro na paunlarin ang sarili sa *TPACK*.

Sa *Comission on Higher Education*, maaaring muling bisitahin ang kurikulum lalo na sa Kolehiyo ng Edukasyon upang magdagdag pa ng mga aralin o asignaturang magpapaunlad ng *kompetensi* ng mga magiging guro. Maaari ding simulan na sa kolehiyo pa lamang ang paghasa ng guro sa anggulo ng *TPACK* at hindi lamang nakapokus sa lumang *PCK*.

Sa susunod na mananaliksik, gumawa o maghanap ng mas komprehensibong instrumento sa pagsukat ng *kompetensi* ng mga guro sa mga domeyn. Mas palawakin din ang sakop ng pananaliksik. Maaaring isali na rin sa pananaliksik ang mga guro sa pribadong paaralan at *Junior High School* (*JHS*) para mas maging holistiko ang pagaaral.

Etikal na Pagsasaalang-alang

Upang mapangalagaan ang karapatan ng mga lumahok, hiningi ang pahintulot ng mismong kaguruan gamit ang *letter of consent.* Hindi pinilit ang mga tagatugon na tatanggi sa paanyayang ibinigay. Binigyang-kalayaan ang mga tagatugong umatras sa pagsagot kung sakaling magbago ang kanilang isip. Ang mga pangalan ng mga kalahok ay hindi binanggit bagkus ay tinumbasan ng mga numero. Ang lahat din ng impormasyong nakuha sa pananaliksik na ito ay konpidensiyal at ginamit lamang sa pananaliksik na ito. Tanging ang mananaliksik, kaniyang *adviser,* at *statistician* ang nakakita ng mga makakalap na tugon. Matapos ng pag-aaral ay dumaan sa tamang proseso ng pag-dispose ng mga papel para mapanatili ang pagiging konpidensiyal.

Pasasalamat

Isang malaking pasasalamat ang nais ialay ng mananaliksik sa mga taong naging bahagi upang mapagtagumpayan ang kaniyang pananaliksik.

Nais pasalamatan ng mananaliksik ang kaniyang tagapayo, Dr. Vasil A. Victoria sa pagtanggap sa mananaliksik bilang *advisee*. Gayundin sa kaniyang karunungan at husay na ibinahagi sa mananaliksik mula sa kolehiyo hanggang sa gradwadong paaralan.

Pasasalamat din para sa mga naging *panelist*, Dr. Evelyn B. Autor, Dr. Ronaldo SP. Elicay, at Dr. Joevani D. Tariman sa komprehensibong mga komento para mas mapaunlad at mapadali ang pananaliksik na ito.

Mainit na pasasalamat din para kina Dr. Ronaldo Elicay, Ms. Ma. Cienna A. Jaucian, Mr. Paolo Jose R. Silang sa pag-validate ng instrumento. Gayundin kina Ms. Kryziah T. Weis at Mr. Levin John B. Oropesa sa paggabay sa mananaliksik sa pagsulat

ng papel na ito. Pati kina Principal Lalaine J. Moratalla, Principal Editha T. Lopez, at Erika James R. Roxas, MLL sa pag-validate ng aking panukalang-proyekto. Nais ding pasalamatan sina Mr. Francis D. Delloro at Ms. Elouis Gianmae S. Cheng sa pagtulong sa aspekto ng estadistika.

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MGA SANGGUNIAN

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TECHNOLOGICAL RESOURCES AND EXPERTISE OF SELECTED PHILIPPINE NATIONAL POLICE (PNP) ANTICYBERCRIME UNITS IN CYBERCRIME

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ABSTRACT

This study evaluates the technological resources and expertise within the Philippine National Police (PNP) Anti-Cybercrime Unit and their impact on cybercrime investigations. Using a descriptive quantitative correlational design, the research involved purposive sampling of 42 PNP personnel, utilizing a researcher-developed questionnaire. The questionnaire assessed three main areas: the level of technological resources (data analytics, machine learning, and digital forensics), personnel's technological expertise (proficiency, utilization, and adoption), and the impact of these factors on case resolution time and success rate in cybercrime investigations. Findings reveal a significant positive correlation between the level of technological resources and the effectiveness of cybercrime investigations. Particularly, machine learning and digital forensics resources demonstrated strong correlations with both case resolution time and success rate. Additionally, proficiency, utilization, and adoption of technology by personnel showed significant positive impacts on investigation outcomes. Notably, the adoption of new technologies exhibited an exceptionally strong correlation with success rate, underlining the transformative impact of embracing new technologies in enhancing cybercrime investigation effectiveness. Based on the findings, it is recommended for cybercrime units investing in advanced machine learning algorithms, expanding digital forensic tools, and implementing comprehensive training programs for personnel to improve case resolution efficiency and overall success rates in combating cybercrime.

Keywords: *Cybercrime Investigations, Technological Resources, Machine Learning, Digital Forensics, Philippine National Police*

INTRODUCTION

The rise of information and communication technologies has created significant challenges for law enforcement agencies and other organizations responsible for maintaining security. Specifically, cybercrime has become a major societal concern in recent years (Lewis, 2018). This term encompasses crimes that either target computer systems and networks or are facilitated by them (Bossler & Berenblum, 2019). The digital landscape has given rise to new types of criminal activities, such as hacking and attacks involving malicious software (Paek et al., 2021). Moreover, traditional forms of crime are also evolving, as criminals exploit the unique features of the online world to carry out their activities (Bossler & Berenblum, 2019). Recent data indicates that Internet Service Providers (ISPs) detect approximately 80 billion automated scans each day, conducted by cybercriminals looking for potential victims (Lewis, 2018).

As of mid-2023, the global internet user base reached 5.19 billion, accounting for 64.6% of the world's population. Additionally, nearly 60% of people worldwide were active on social media platforms (Petrosyan, 2023). In the context of the Philippines, the country had 85.16 million individuals using the internet at the beginning of 2023, which represented 73.1% of its total population (Kemp, 2023). In light of this, law enforcement have been called to action to adopt a proactive organizational approach, including educational and public awareness programs, to effectively combat online property crimes and, by extension, industrial espionage (Paek et al., 2021). In the Philippines, as in other developing countries throughout Southeast Asia, cybercrime is a looming problem. Greater integration of technology into various sectors has given rise to myriad illegal activities online, often due to inadequate safeguards and low public awareness about the risks involved (Cybercrime Threat Landscape in the Philippines, 2013).

The Philippine National Police reports surges in both financially motivated cybercrimes and politically motivated cyber-attacks targeting government infrastructure; lacking an expansive cybercrime law on its books hasn’t prevented the force from creating specialized units like the Anti-Cybercrime Group or digital forensic labs designed for investigating such offenses (Cybercrime Threat Landscape in the Philippines, 2013). Instead it advocates taking an all-channel approach to fighting these crimes. This includes building organizational competence, fostering public-private partnerships, and strengthening international cooperation (Cybercrime Threat Landscape in the Philippines, 2013). Hence, the escalating prevalence of cybercrime in the Philippines, coupled with the rapid adoption of digital technologies, underscores an urgent need for a comprehensive study. This study aims to evaluate the technological resources and expertise available to the PNP Anti-Cybercrime Units. It aims to assess the current levels of data analytics, machine learning, and digital forensics tools, as well as the proficiency, utilization, and adoption of these resources by the unit's personnel. The study focuses on understanding how these technological aspects influence case resolution time and success rate in cybercrime investigations. Additionally, it explores the correlation between the technological capabilities of the unit and the effectiveness of investigations. Based on the findings, the study seeks to provide strategic recommendations to enhance the unit's

efficiency in handling cybercrime, thereby aiding in policy-making and operational strategy development.

Research Questions

The main objective of the study is to determine the technological resources and expertise of PNP personnel in the Anti-Cybercrime Unit and its impact on cybercrime investigations. Specifically, it aims to answer the following questions:

1. What is the level of technological resources in PNP Anti-Cybercrime Unit in terms of:
   1.1 Data analytics
   1.2 Machine learning
   1.3 Digital forensics
2. What is the level of technological expertise of PNP personnel under anti-cybercrime unit in terms of:
   2.1 Proficiency in technological resources
   2.2 Utilization of technological resources
   2.3 Adoption of technological resources
3. How do technological resources and expertise impacts cybercrime investigations in terms of:
   3.1 Case Resolution Time
   3.2 Success Rate
4. Is there a significant relationship between the level of technological resources in the PNP Anti-Cybercrime Unit and cybercrime investigations?
5. Is there a significant relationship between the level of technological expertise of personnels in the PNP Anti-Cybercrime Unit and cybercrime investigations?
6. What strategic actions and recommendations can be made based on the findings of the study?

METHODOLOGY

Research design

The present study utilized a descriptive quantitative correlational research design. According to Johnson and Christensen (2020), descriptive research designs aim to accurately describe characteristics, behaviors, or attitudes of a specific population. Correlational designs, as explained by Creswell and Creswell (2017), are used to examine the relationships. The descriptive aspect allows for a detailed account of the current state of technological resources and expertise within the PNP Anti-Cybercrime Unit. It provides a snapshot of the existing conditions, thereby offering a

baseline for analysis (Johnson & Christensen, 2020). Second, the correlational aspect of the design enables the study to explore the relationships between variables such as the level of technological resources, expertise, and their impact on cybercrime investigations. This is crucial for understanding how these elements interact and influence each other, which can be instrumental for policy-making and strategic planning (Creswell & Creswell, 2017).

Population and sampling

Purposive sampling will be used to select the study's respondents. According to Etikan et al. (2016), purposive sampling is a non-probability sampling method where researchers select participants based on specific characteristics or qualities that serve the study's objectives. In this case, the criteria for sampling includes PNP personnel from different Anti Cybercrime Units within the country who are directly involved in cybercrime investigations, have experience with the technological resources in question, and are willing to participate in the study. This method ensures that the sample is highly relevant to the research questions and objectives. 42 respondents were selected for this study. While larger sample sizes are generally more representative, the sample is considered sufficient for several reasons. First, the study is focused on a specialized unit within the PNP, limiting the pool of potential respondents. Second, a sample size of 25-50 is often considered adequate for correlational studies to detect medium to large effect sizes (Cohen, 1988). Lastly, given the specialized nature of the study, each respondent's input is highly valuable, making a smaller but more focused sample more appropriate for this research.

Research instrumentation

The research employed a researcher-made questionnaire as its primary data collection instrument. This questionnaire is divided into three main sections. The first section is the technological Resources: This section assesses the level of technological resources available in the PNP Anti-Cybercrime Unit, focusing on Data Analytics, Machine Learning, and Digital Forensics. Respondents are asked to rate their level of agreement with statements related to these resources. The second section is the Level of Technological Expertise of PNP Personnel: This section gauges the proficiency, utilization, and adoption of technological resources by the personnel. It aims to understand how well-equipped the staff are in terms of training and expertise. The last section examines the Impact on Cybercrime Investigations. It evaluates how the technological resources and expertise affect case resolution time and the success rate of cybercrime investigations.The questionnaire uses a 5-point Likert scale, ranging from "Strongly Agree" to "Strongly Disagree," to capture the respondents' level of agreement with each statement. The range of means is demonstrated below:

Table 1. Five-point Rating Scale Evaluation Tools

POINT	SCALE	EQUIVALENT
5	4.21-5.00	Strongly Agree
4	3.41-4.20	Agree
3	2.61-3.40	Neither Agree nor Disagree
2	1.81-2.60	Disagree
1	1.00-1.80	Strongly Disagree

Before the actual data collection, a pilot test was conducted with a smaller sample of respondents who meet the study's criteria. This is to ensure the clarity, relevance, and reliability of the questionnaire items. The reliability of the instrument will be assessed using Cronbach's alpha, a statistical measure used to gauge internal consistency. An alpha value of 0.7 or above is generally considered acceptable for research purposes. The questionnaire was also validated by the thesis adviser to ensure its academic rigor and alignment with the study's objectives.

Data gathering procedures and analysis

The study began with obtaining necessary approvals from the academic institution and the Philippine National Police (PNP) Anti-Cybercrime Unit. A detailed proposal outlining the study's objectives, methodology, and ethical considerations was submitted for review. Following the approvals, a pilot test was conducted with a select group of respondents to assess the questionnaire's clarity, relevance, and reliability. Feedback from this pilot test was instrumental in refining the questionnaire, ensuring its validity and reliability, as measured by Cronbach's alpha. The main data collection phase commenced with purposive sampling, targeting PNP personnel involved in cybercrime investigations. These respondents were briefed about the study, and informed consent was obtained. Questionnaires were distributed in both electronic and hard copy formats, as per the convenience of the participants. A timeline for completion was established, accompanied by follow-up reminders to ensure a high response rate. The data gathered were then coded and analyzed using SPSS IBM Statistics. This analysis included frequency and percentage to provide an overview of the data, weighted mean to measure respondents' perceptions on a Likert Scale, and Pearson Correlation to assess relationships between variables such as technological resources, expertise, and their impact on cybercrime investigations.

RESULTS

Level of Technological Resources in PNP Anti-Cybercrime Unit

Table 2 draws insightful conclusions about the level of data analytics resources available in the PNP Anti-Cybercrime Unit

Table 2. Assessment of the Respondents of the Level of technological resources in PNP Anti-Cybercrime Unit in terms of Data Analytics.

Data analytics	Mean	Verbal Description
1. Our unit has specialized software like Tableau or Excel for data analytics.	4.048	Agree
2. The data analytics software we use has been updated within the last year.	3.929	Agree
3. I find it easy to perform tasks like data filtering and sorting using our analytics tools.	4.024	Agree
4. Our data analytics tools can reliably handle large datasets (e.g., 1TB or more) for cybercrime investigations.	3.905	Agree
5. Our data analytics capabilities are sufficient for tasks like trend analysis and predictive modeling.	3.714	Agree
Weighted Mean	3.924	Agree

Legend: 4.21-5.00 - Strongly Agree; 3.41-4.20- Agree; 2.61-3.40 - Neither Agree nor Disagree; 1.81-2.60 Disagree; 1.00-1.80 -Strongly Disagree

Meanwhile, Table 3 shows the assessment of technological resources in the PNP Anti-Cybercrime Unit, specifically in terms of machine learning.

Table 3. Assessment of the Respondents of the Level of technological resources in PNP Anti-Cybercrime Unit in PNP in terms of Machine Learning

Data analytics	Mean	Verbal Description
1. Our unit uses machine learning algorithms to identify patterns in cybercrime data effectively.	3.762	Agree
2. The user interface of our machine learning software is intuitive and easy to navigate.	3.810	Agree
3. Our machine learning tools receive updates at least once every six months to improve performance.	3.810	Agree
4. The machine learning algorithms we use have a high accuracy rate in predicting cybercrime trends.	3.810	Agree
5. Machine learning tools have been crucial in solving complex cybercrime cases that would have been difficult to solve otherwise.	4.024	Agree
Weighted Mean	3.843	Agree

Legend: 4.21-5.00 - Strongly Agree; 3.41-4.20- Agree; 2.61-3.40 - Neither Agree nor Disagree; 1.81-2.60 Disagree; 1.00-1.80 -Strongly Disagree

Similarly, the analysis of Table 4 reveals valuable insights into the level of digital forensics resources at the PNP Anti-Cybercrime Unit

Table 4. Assessment of the Respondents of the Level of technological resources in PNP Anti-Cybercrime Unit in terms of Digital Forensics

Data analytics	Mean	Verbal Description
1. We have specialized digital forensics tools, like EnCase or FTK, for our cybercrime investigations.	4.214	Strongly Agree
2. The interface of our digital forensics tools is user-friendly, requiring minimal training.	4.167	Agree
3. Our digital forensics software is updated at least annually to handle new types of cybercrime.	3.976	Agree
4. The digital forensics tools we use can reliably analyze various file formats, such as .txt, .jpg, and .pdf.	4.095	Agree
5. Our digital forensics capabilities can handle complex tasks like data recovery from damaged devices.	4.024	Agree
Weighted Mean	4.095	Agree

Legend: 4.21-5.00 - Strongly Agree; 3.41-4.20- Agree; 2.61-3.40 - Neither Agree nor Disagree; 1.81-2.60 Disagree; 1.00-1.80 -Strongly Disagree

Table 5 presents a comprehensive view of the level of technological expertise of personnel in the PNP Anti-Cybercrime Unit

Table 5. Assessment of the Respondents of the Level of Technological Expertise in PNP Anti-Cybercrime Unit in terms of Proficiency

Proficiency	Mean	Verbal Description
1. I can operate specialized software like Wireshark for network analysis.	3.333	Agree
2. Most personnel in our unit have completed at least one formal training course in technology.	4.071	Agree
3. I have received at least 20 hours of training to use our technological resources.	3.905	Agree
4. I feel confident using software tools to analyze malware or phishing attacks.	3.595	Agree
5. Our unit has personnel certified in areas like Certified Ethical Hacking (CEH).	3.429	Agree
Weighted Mean	3.667	Agree

Legend: 4.21-5.00 - Strongly Agree; 3.41-4.20- Agree; 2.61-3.40 - Neither Agree nor Disagree; 1.81-2.60 Disagree; 1.00-1.80 -Strongly Disagree

On the other hand, Table 6 provides a detailed assessment of the utilization of technological expertise in the PNP Anti-Cybercrime Unit, focusing on how various technological resources are applied in the field.

Table 6. Assessment of the Respondents of the Level of Technological Expertise in PNP Anti-Cybercrime Unit in terms of Utilization

Utilization	**Mean**	**Verbal Description**
1. I use data analytics software in at least 70% of my investigations.	3.619	Agree
2. Our unit uses all the licensed software tools at least once a month.	3.905	Agree
3. I can access any of our technological resources within 10 minutes when needed.	3.667	Agree
4. I know how to use at least three different types of software for data analysis, machine learning, and digital forensics.	3.762	Agree
5. Using software tools has helped me reduce manual data sorting time by at least 50%.	3.929	Agree
Weighted Mean	3.776	Agree

Legend: 4.21-5.00 - Strongly Agree; 3.41-4.20- Agree; 2.61-3.40 - Neither Agree nor Disagree; 1.81-2.60 Disagree; 1.00-1.80 -Strongly Disagree

Table 7 on the other hand shows the level of technological expertise in pnp anti-cybercrime unit in terms of adoption.

Table 7. Assessment of the Respondents of the Level of Technological Expertise in PNP Anti-Cybercrime Unit in terms of Adoption

Adoption	**Mean**	**Verbal Description**
1. I am open to using new technological resources.	4.333	Strongly Agree
2. Our unit quickly adopts new technological tools.	4.191	Agree
3. The adoption of new technology is supported by our leadership.	4.357	Strongly Agree
4. I find it easy to adapt to new technological resources.	4.167	Agree
5. Adopting new technology has made our investigations more effective.	4.238	Strongly Agree
Weighted Mean	4.257	Strongly Agree

Legend: 4.21-5.00 - Strongly Agree; 3.41-4.20- Agree; 2.61-3.40 - Neither Agree nor Disagree; 1.81-2.60 Disagree; 1.00-1.80 -Strongly Disagree

Technological Resources and Expertise Impact on Cybercrime Investigations

Table 8 provides an insightful assessment of the impact of technological resources and expertise on cybercrime investigations in terms of case resolution time in the PNP Anti-Cybercrime Unit

Table 8. Assessment of the Respondents of the Impact of Technological Resources and Expertise Cybercrime in terms of Case Resolution Time

Case Resolution Time	Mean	Verbal Description
1. Using technological resources speeds up case resolution.	4.238	Strongly Agree
2. Advanced technology helps in quicker data collection.	4.381	Strongly Agree
3. Technological expertise reduces the time needed for analysis.	4.381	Strongly Agree
4. Our unit resolves cases faster due to technological aid.	4.262	Strongly Agree
5. Technology helps us meet deadlines more efficiently.	4.357	Strongly Agree
Weighted Mean	4.324	Strongly Agree

Legend: 4.21-5.00 - Strongly Agree; 3.41-4.20- Agree; 2.61-3.40 - Neither Agree nor Disagree; 1.81-2.60 Disagree; 1.00-1.80 -Strongly Disagree

The responses from Table 9 underscore the significant impact of technological resources and expertise on the success rates of cybercrime investigations within the PNP Anti-Cybercrime Unit.

Table 9. Assessment of the Respondents of the Impact of Technological Resources and Expertise Cybercrime in terms of Case Resolution Time

Case Resolution Time	Mean	Verbal Description
1. Technological resources have increased our case success rate.	4.167	Agree
2. Our technological expertise contributes to successful investigations.	4.262	Strongly Agree
3. Advanced technology helps us collect more accurate data.	4.286	Strongly Agree
4. Technology enables us to build stronger cases.	4.286	Strongly Agree
5. Our unit's success rate has improved due to technological advancements.	4.214	Strongly Agree
Weighted Mean	4.243	Strongly Agree

Legend: 4.21-5.00 - Strongly Agree; 3.41-4.20- Agree; 2.61-3.40 - Neither Agree nor Disagree; 1.81-2.60 Disagree; 1.00-1.80 -Strongly Disagree

Correlation Analysis

Table 10 presents a correlation analysis assessing the relationship between the level of technological resources in the PNP Anti-Cybercrime Unit and the outcomes of cybercrime investigations, specifically focusing on case resolution time and success rate.

Table 10. Significant relationship between the level of technological resources in the PNP Anti-Cybercrime Unit and cybercrime investigations

Technological Resources		Case Resolution Time	Success Rate
Data Analytics	Pearson Correlation	0.291	.495**
	Sig. (2-tailed)	0.061	.001
Machine Learning			.575**
	Pearson Correlation	.391*	
	Sig. (2-tailed)	0.011	.000
Digital Forensics	Pearson Correlation	.399**	.526**
	Sig. (2-tailed)	0.009	.000

***. Correlation is significant at the 0.01 level (2-tailed).*
**. Correlation is significant at the 0.05 level (2-tailed).*

Meanwhile, Table 11 provides an analysis of the relationship between the level of technological expertise of personnel in the PNP Anti-Cybercrime Unit and the outcomes of cybercrime investigations, focusing on case resolution time and success rate.

Table 11. Significant relationship between the level of technological expertise of personnels in the PNP Anti-Cybercrime Unit and cybercrime investigations

Technological Resources		Case Resolution Time	Success Rate
Proficiency	Pearson Correlation	.258	.306*
	Sig. (2-tailed)	.099	.049
Utilization	Pearson Correlation	.395**	.491**
	Sig. (2-tailed)	.010	.001
Adoption	Pearson Correlation	.391*	.810**
	Sig. (2-tailed)	.723**	.000

***. Correlation is significant at the 0.01 level (2-tailed).*
**. Correlation is significant at the 0.05 level (2-tailed).*

DISCUSSION

Level of Technological Resources in PNP Anti-Cybercrime Unit

The assessment of the PNP Anti-Cybercrime Unit, as shown in Table 2, reveals a strong agreement among respondents about the adequacy of data analytics resources in the unit. The unit is equipped with specialized software like Tableau or Excel for data analytics, receiving a mean score of 4.048, indicative of advanced tools necessary for effective data analysis (Begum & Ahmed, 2015). Regular updates of data analytics software, reflected in a mean score of 3.929, align with the evolving nature of cybercrime, ensuring the tools remain effective against contemporary threats (Rajivan et. al., 2020). The user-friendliness of these tools, evident from a mean score of 4.024, contributes to efficient analysis (Cypress, 2019), while their capability to handle large datasets, with a mean of 3.905, addresses the significant data volumes in cybercrime investigations (Hughes et. al., 2021). However, the lowest mean score of 3.714 for the unit's capabilities in trend analysis and predictive modeling suggests room for improvement in these critical areas (Veena et. al., 2022).

Overall, the weighted mean of 3.924 indicates a general agreement on the adequacy of the unit's data analytics resources, with a need for continuous improvement and updates to keep pace with the rapidly evolving nature of cybercrime. These aspects are crucial for the effective identification and prevention of cybercrimes and should inform policy decisions, training programs, and resource allocation within the unit (Abdullah, 2019). The findings suggest that while the PNP Anti-Cybercrime Unit is well-equipped in terms of data analytics resources, there is a need for ongoing enhancement in specific areas to maintain the unit's effectiveness in cybercrime investigations.

The assessment of machine learning capabilities within the PNP Anti-Cybercrime Unit reveals a positive perception of the effectiveness of machine learning in cybercrime investigations. The mean score of 3.762 for the effectiveness of machine learning algorithms in identifying cybercrime patterns indicates a strong agreement on their vital role in detecting and analyzing cyber threats, as highlighted by Sarker (2023). The user-friendliness of the machine learning software, with a mean score of 3.810, is recognized as crucial for efficient usage and data analysis, a point emphasized by Kumari (2019). Furthermore, the regular updates of these tools, also scoring 3.810, are seen as essential in keeping pace with the evolving nature of cybercrime, aligning with Mugarza et. al. (2020). The reliability of machine learning in predicting cybercrime trends is underscored by a similar mean score of 3.810, reflecting its importance in proactive cybercrime management, as discussed by Mijwil et. al. (2023).

The highest mean score of 4.024 acknowledges the critical role of machine learning tools in solving complex cybercrime cases, echoing the transformative impact of these technologies in cybercrime investigations reported by Sarker (2023). The overall weighted mean of 3.843 indicates a consensus on the effectiveness and adequacy of machine learning resources in the unit. However, there is an identified need for further

development, especially in enhancing the effectiveness and update frequency of these tools. These findings suggest that machine learning is integral to modern cybercrime investigations, aiding in pattern recognition, predictive analysis, and resolving complex cases. This underscores the need for continued investment and advancement in machine learning capabilities within the unit to effectively tackle the challenges posed by modern cybercrime.

The analysis of the PNP Anti-Cybercrime Unit's digital forensics capabilities, as reflected in Table 4, indicates a high level of proficiency and preparedness in handling cybercrime investigations. The unit's strong agreement on having specialized digital forensics tools, such as EnCase or FTK, with a mean score of 4.214, highlights its well-equipped state for effective digital investigations (Dweikat et. al., 2020). The user-friendliness of these tools, evidenced by a mean score of 4.167, underscores their accessibility and efficiency in facilitating quicker analysis with minimal training, as emphasized by Madinger (2018). Regular updates of digital forensics software, with a mean score of 3.976, are crucial for keeping up with evolving cyber threats (Mugarza et. al., 2020), while the tools' versatility in analyzing various file formats, scoring 4.095, is essential for comprehensive evidence examination (Abdullah, 2019).

Furthermore, the unit's confidence in handling complex tasks like data recovery from damaged devices, indicated by a mean score of 4.024, is a critical component in cybercrime investigations (Solodov & Solodov, 2021). The overall weighted mean of 4.095 suggests a general consensus on the adequacy and effectiveness of the digital forensics resources available. However, the findings also point towards areas for further development, particularly in keeping the software updated and enhancing data recovery capabilities. In summary, the PNP Anti-Cybercrime Unit demonstrates strong digital forensics capabilities, essential for modern cybercrime investigations, yet there is a recognized need for continuous improvement in line with the evolving nature of cybercrime and technological advancements.

Level of Technological Expertise of PNP Personnel Under Anti-Cybercrime Unit

The assessment of technological expertise among personnel in the PNP Anti-Cybercrime Unit, as reflected in Table 5, indicates a proficient level of skill and training in handling cybercrime investigations. Personnel exhibit a good understanding and ability to operate specialized software for network analysis, such as Wireshark, with a mean score of 3.333, reflecting competence crucial for cyber threat analysis (Dodiya & Singh, 2022). The highest mean score of 4.071 for having completed formal training courses suggests a strong foundation in technological skills essential for cybercrime investigation (Shillair et. al., 2022). Additionally, the positive response, with a mean of 3.905, towards receiving at least 20 hours of training highlights the unit's commitment to ongoing skill development, aligning with the need for continuous training in the evolving field of cybercrime (Martin, 2022).

Furthermore, confidence in using software tools for analyzing malware or phishing attacks, indicated by a mean score of 3.595, suggests proficiency, albeit with room for improvement in these specific areas (Morrison et. al., 2021). The presence of personnel with certifications like Certified Ethical Hacking (CEH), reflected in a mean score of 3.429, underscores the specialized skill set within the unit, critical for effective cybercrime investigation (Wang & D'Cruze, 2019). The overall weighted mean of 3.667 points towards a general agreement on the technological proficiency of the unit, while also identifying areas for further skill enhancement. In summary, the PNP Anti-Cybercrime Unit demonstrates commendable technological expertise, with a strong emphasis on formal training and certified skills, yet acknowledges the need for continuous development, especially in areas like malware and phishing analysis.

The analysis of Table 6 reflects a strong utilization of technological tools within the PNP Anti-Cybercrime Unit indicating a high level of reliance on and proficiency in various software tools for cybercrime investigations. The mean score of 3.619 for the use of data analytics software in the majority of investigations highlights the integral role these tools play in addressing the complexities of modern cybercrime, as emphasized by Carrascosa et al. (2017). This extensive use of data analytics is crucial for data-driven approaches in investigations. The highest mean score of 3.929 for the reduction of manual data sorting by at least 50% using software tools points towards significant improvements in operational efficiency, a critical aspect in effective cybercrime investigations (Yin et al., 2022).

Furthermore, regular usage of licensed software tools, with a mean of 3.905, suggests that the unit efficiently utilizes its technological resources, maintaining proficiency and ensuring tool effectiveness (Zhan et al., 2018). The positive response, with a mean score of 3.667, regarding quick access to technological resources, underlines the unit's ability to respond promptly to emerging situations, a key factor in the fast-paced environment of cybercrime investigation (Zhao et al., 2024). Additionally, a mean score of 3.762 for the ability to use diverse types of software for data analysis, machine learning, and digital forensics indicates a versatile skill set among the personnel, essential for handling various facets of cybercrime (Chen et al., 2021). Overall, with a weighted mean of 3.776, the consensus suggests not only a well-equipped unit but also one adept in effectively applying a range of technological tools in their operations, pointing towards a strong capability in integrating technology into cybercrime

The assessment of the PNP Anti-Cybercrime Unit's approach to adopting new technology, as reflected in Table 7, shows a strong inclination towards embracing technological advancements, vital in the dynamic field of cybercrime. The high mean score of 4.333 for openness to using new technological resources signifies a robust willingness among unit members to integrate new technologies, an essential aspect in enhancing investigative effectiveness (Tariq et al., 2023). The support from leadership, indicated by a mean score of 4.357, plays a crucial role in this process, fostering a culture of innovation and smooth integration of new tools into existing systems (Aziz et al., 2020). Additionally, a high mean score of 4.238 for the statement regarding the effectiveness of

new technology adoption in investigations underscores its positive impact on the unit's capabilities (Laufs & Borrion, 2022).

The lowest score, although still within the 'Agree' range, was 4.167 for the ease of adapting to new technologies, suggesting some challenges or a learning curve in this adoption process (Pollard et al., 2022). The unit's proactive stance in quickly adopting new tools, with a mean score of 4.191, reflects its commitment to staying updated with technological trends, crucial for maintaining an edge in cybercrime investigations (Mhlongo et al., 2023). The overall weighted mean of 4.257 indicates a strong consensus on the effectiveness and positive attitude towards the adoption of new technology, suggesting that the PNP Anti-Cybercrime Unit is not only open to but also proficient in incorporating technological advancements. This approach is essential for keeping pace with the evolving nature of cybercrime and enhancing the unit's investigative capabilities.

Technological Resources and Expertise Impact on Cybercrime Investigations

The findings from Table 8 clearly indicate a strong consensus among respondents in the PNP Anti-Cybercrime Unit on the significant impact of technological resources and expertise in enhancing the efficiency of cybercrime investigations, specifically in terms of case resolution time. The high mean scores, such as 4.238 for using technological resources to speed up case resolution and 4.381 for both quicker data collection and reduced analysis time, demonstrate the critical role advanced technology and expertise play in expediting investigative processes (Laufs & Borrion, 2022; Milenkovic, 2023). These scores underscore the importance of technology in not only accelerating case resolutions but also in improving the efficiency of meeting operational deadlines, as reflected by a mean score of 4.357 (Chinedu et. al., 2021).

Furthermore, the statement regarding the faster resolution of cases due to technological aid received a mean of 4.262, reinforcing the perception that technology significantly contributes to the unit's ability to resolve cases more quickly (Esposito et. al., 2023). The overall weighted mean of 4.324 under 'Strongly Agree' suggests a unanimous acknowledgment of the vital role that technology plays in the contemporary landscape of cybercrime investigation. These results highlight the indispensable nature of technology in optimizing investigative processes, making a compelling case for the continuous development and integration of technological advancements in the field of cybercrime investigation.

The responses from Table 9 underscore the significant impact of technological resources and expertise on the success rates of cybercrime investigations within the PNP Anti-Cybercrime Unit. With a mean score of 4.167 for the statement regarding the increase in case success rates due to technological resources, there is a clear indication of the positive effects of technology in enhancing investigation outcomes, aligning with the perspectives of Yavorsky et al. (2021) on the transformative role of technology in law enforcement. The unit's technological expertise, receiving a high mean score of 4.262, is perceived as a pivotal factor contributing to successful investigations, echoing the

established correlation between technological proficiency and investigative success discussed by Beer & Mulder (2020).

Furthermore, the highest mean scores of 4.286 for both the accuracy of data collection and the ability to build stronger cases due to advanced technology reinforce the critical importance of technological advancement in ensuring evidence reliability and effective case-building, as highlighted by Taherdoost (2021). Similarly, the strong agreement, with a mean score of 4.214, that the unit's success rate has improved due to technological advancements, reflects a consensus on the positive influence of technology in law enforcement, a theme explored in Strom (2017). The overall weighted mean of 4.243 under 'Strongly Agree' across all statements signifies a broad recognition of the integral role technology plays in boosting the effectiveness of cybercrime investigations. In conclusion, the findings from Table 9 illustrate the indispensable role of both technological resources and expertise in elevating the success rates of cybercrime case resolutions in the PNP Anti-Cybercrime Unit, emphasizing the need for continuous technological advancement and skill development.

Correlation Analysis

For correlations, the analysis reveals significant positive relationships, particularly with machine learning and digital forensics showing strong correlations with both case resolution time and success rate. Data analytics also shows a moderate positive correlation, especially with success rate, suggesting that higher levels of technological resources are associated with more efficient and successful investigations. These findings highlight the importance of advanced technological resources, as they are closely linked to improved investigation outcomes (Abdullah, 2019; Veena et al., 2022; Pedapudi & Vadlamani, 2023).

Meanwhile, on the analysis of the relationship between the level of technological expertise of personnel in the PNP Anti-Cybercrime Unit and the outcomes of cybercrime investigations, focusing on case resolution time and success rate, results demonstrates that proficiency, utilization, and adoption of technology by personnel are significantly positively correlated with both case resolution time and success rate. Notably, the adoption of new technologies shows an exceptionally strong correlation with success rate, emphasizing the transformative impact of embracing new technologies in enhancing the effectiveness of cybercrime units. This analysis underscores the critical role of personnel’s technological expertise in boosting the efficiency and success of cybercrime investigations (Beer & Mulder, 2020; Przeszlowski et al., 2023; Escamilla & Reichert, 2019).

Strategic Actions and Recommendations Based on The Findings of The Study

The study's findings suggest several strategic actions and recommendations to improve the effectiveness of the PNP Anti-Cybercrime Unit in combating cybercrime. In machine learning, investing in state-of-the-art algorithms and tools is crucial in fostering

innovation and research within the unit, custom-tailored solutions can be developed specifically designed to tackle the unique challenges posed by cybercrime in the Philippines. Expanding the range of digital forensics tools – especially those capable of handling diverse file formats and complex data recovery tasks – is also deemed essential.For digital forensics, expanding the range of tools to include more sophisticated software for diverse file formats and complex data recovery tasks is crucial.

Moreover, regarding personnel proficiency, utilization, and adoption, a comprehensive training program is needed. Not only covering technical aspects but also emphasizing practical application in real-world scenarios, these initiatives should include hands-on workshops and continuous learning opportunities so as to effectively adapt to ever-evolving cyber threats. On the other hand, to influence case resolution time and success rate positively, a holistic approach that integrates technological resources with investigative strategies is essential. This approach should leverage machine learning and data analytics for quicker and more accurate data collection and analysis, leading to more effective case resolutions.

Finally, to address the correlation between technological capabilities and investigation effectiveness, the unit should adopt a strategy that aligns technological upgrades with investigative needs. This could involve collaborative efforts with tech companies and academic institutions for access to state-of-the-art resources and training. Regular assessments and feedback mechanisms should be established to ensure that the technology used remains relevant and effective in addressing the dynamic nature of cybercrime. These recommendations aim to enhance the PNP Anti-Cybercrime Unit's capacity to effectively utilize technology in its ongoing battle against cybercrime based on the empirical evidences found in the study.

Conclusions

The study conducted on the technological resources and expertise in the PNP Anti-Cybercrime Unit showed significant insights into the impact of technology on cybercrime investigations. Based on the results, significant correlation between the technological capabilities of the unit and the effectiveness of its investigations is shown with strong correlation between the adoption of new technologies and the success rate of cases. The analysis also revealed that machine learning and digital forensics resources show strong positive relationships with both the speed of case resolution and the success rate of investigations as perceived by the respondents. Moreover, the study highlighted the importance of proficiency, utilization, and adoption of technology by personnel as key factors in the success of cybercrime investigations.

Recommendations

Given the empirical results of the study undeniable link between these factors and investigation success rates, it is imperative to prioritize technology enhancement, innovation efforts, and workforce proficiency. Effectively merging technological expertise and resources with investigations will enhance combatting cybercrime outcomes

inquiries; hence, embracing and leveraging new and emerging technologies emerging technologies is essential in the fight against cybercrime in the Philippines.

Compliance with Ethical Standards

This study followed ethical guidelines throughout the research process. Approval was obtained from relevant institutional review boards and the selected Philippine National Police Anti-Cybercrime Units to ensure all research activities were conducted within legal and ethical boundaries. Informed consent was gathered from all participants in order to make sure of their awareness and voluntary participation. Data privacy and confidentiality were strictly upheld, with participant information anonymized and securely stored. Moreover, the research adhered to the principles of integrity, respect, and responsibility, ensuring no harm to participants and maintaining the highest standards of ethical conduct.

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THE BACKBONE OF THE FAMILY: A STUDY ON TAGASALO PERSONALITY OF FEMALE BREADWINNER STUDENTS

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ABSTRACT

This qualitative study explored the lived experiences of female breadwinner students with a tagasalo personality. The main purpose of the study is to explore the challenges that female breadwinner students with a tagasalo personality encounter in balancing their academic, financial, and household responsibilities. The study utilized purposive sampling, selecting four participants for semi-structured, in-person interviews. The data were categorized into major themes and subthemes and analyzed using Interpretative Phenomenological Analysis (IPA) guidelines. The emerging themes and sub-themes were the following: Major Theme 1: Resource-Balancing Struggles (with sub-themes, Time and Finance), Major Theme 2: Interpersonal Turmoil (with sub-themes, Family and Peers), Major Theme 3: Multifaceted Role Challenges (with sub-themes, Balancing of Personal Priorities and Fulfillment of Family Obligations), Major Theme 4: Internal Conflict: Family Loyalty vs. Independence (with sub-themes, Fulfillment of Parental Commitments and Contemplation of Abandonment of Family Support), Major Theme 5: Emotional Drains (with sub-themes, Confusion, Sadness, and Burnout), Major Theme 6: Early-life Experiences (with sub-themes, Adaptability of Persona and Loss of Youthful Exploration), Major Theme 7: Enduring and Positive Mindset (with sub-themes, Empowerment of Resilience and Persistence and Faith and Positivity), and Major Theme 8: Program Recommendations. Some recommendations were for breadwinner students to consider seeking out mentorship programs that pair students with successful professionals who can provide guidance, support, and networking opportunities. Additionally, society might consider raising awareness about the challenges faced by female breadwinner students, which can promote a holistic understanding and inclusive environment.

Keywords: *Female breadwinner, Breadwinner students, Tagasalo personality*

INTRODUCTION

Breadwinner is the household's principal source of income and being the breadwinner is crucial since it generates the necessary revenue for the family to survive. In most families, the family's primary provider also serves as the head of the home. In other words, they are in charge of deciding how to spend the household's money. They frequently cover the living expenses and take care of their dependents (Kagan, 2023). They might also be in charge of giving the family emotional support when things get tough. In the Philippines, providing for your family is not simple. Due to the rising cost of living, many families are having financial difficulties. However, despite the struggles, breadwinners are still viewed as heroes in their families (InLife, 2022).

In the midst of the rise of breadwinners, there are also students who take on this role for their families while pursuing their education. The breadwinner student is a student who takes the role of being the primary financial provider for their family while also attending school. In some circumstances, they may also be responsible for taking care of their siblings, providing for their basic needs, or even managing household tasks. Moreover, Johnson et al.'s (2018) study shed light on the complex connection between family financial obligations and academic goals for female breadwinner students. This purposeful focus highlighted how these young women's choices and motivations are shaped by changing gender dynamics and societal expectations as they balance being a primary provider and a student.

The Tagasalo personality in the family is an important element of a Filipino family dynamic. It refers to the tendency of members of the same family to show respect and kindness towards each other, to protect and watch out for each other, and to support and encourage each other through times of difficulty. This trait is viewed as highly important in Filipino culture, and serves as a strong bond between family members (Perez, 2021). In the Filipino culture, a child is frequently given the responsibilities and obligations of their parents as they get older. Also, it is frequent that the oldest child is the one who fills the role of the parent's younger equal. Undeniably, tagasalo is a practice that has been widely reported to occur in Filipino families (Lam & Yeoh, 2019).

Moreover, the concept of Tagasalo, as investigated by Coan et al. (2018) and Beresin and Watkins (2022), goes further into the complex realities of students who are the breadwinners, especially those who originate from lower-class families. The portrayal of a resolute female student breadwinner by Yssa Cardona (2021) brings to light the challenging circumstances encountered by those pushed into early adulthood, who must juggle their academics, several jobs, and domestic duties. Their steadfast dedication to learning and hopes for a better future for their family in spite of these enormous challenges are evidence of their perseverance and resilience in the face of difficulty.

The study explored the experiences of female breadwinner students who are expected to fulfill household duties and provide financial support for their family while pursuing their education. However, it is important to note that the tagasalo personality should not be misconstrued as an obligation but as a role similar to being Filipino. Therefore, it is not a toxic trait. The goal of the study is to showcase the "tagasalo" as a trait and emphasize that it requires social support, just like any other role. Many studies have discussed the experiences of female breadwinners, but few have focused on the lives of female breadwinner students and how they cope with it. This study aimed to explore the challenges that breadwinner students encountered in balancing their academic, financial, and household responsibilities.

Research Questions

1. What are the lived experiences of female breadwinner students as tagasalo in their family?
2. Based on their experiences, what themes emerged?
3. What model or program may be proposed to breadwinner students as tagasalo in their family?

METHODOLOGY

Research Design

The Interpretative Phenomenological Analysis (IPA) is a qualitative method that focuses on exploring and understanding people's experiences and points of view, particularly concerning a certain event or subject. IPA is a versatile and adaptive methodology that enables researchers to delve deeply and minutely into participants' rich meanings and experiences. Furthermore, the term "understanding" effectively encompasses the two elements of interpretation and understanding in terms of identification or empathy and understanding as an attempt to comprehend. Incorporating these aspects into the inquiry is likely to result in a more comprehensive analysis and provide a more complete portrayal of the individual. Moreover, IPA focuses on exploring how individuals construct meanings in their personal and social world (Noon, 2018). IPA is particularly appropriate for this study as it allows for a nuanced exploration of participants' perspectives and experiences.

Participants of the Study

The study had four female participants who were breadwinners and students at the same time. These participants were required to possess a tagasalo personality, between the ages of 20 to 30 years old, and reside within Cabuyao and Calamba, Laguna. An individual with a tagasalo personality was usually seen as the problem-solver in the family and would take on difficult tasks without hesitation. They are quite self-reliant, and are known to not ask for help or accept advice from others. Participants had to be the primary breadwinner in their households and responsible for providing financial support for their families. Additionally, participants also had to be currently enrolled in a school or university and at the same time currently employed in a full-time or part-time job.

Research Instrument

The study utilized semi-structured interview questions created by researchers as the research instrument in the process of collecting data. The research instrument consisted of open-ended questions. The researchers utilized this type of questions to give participants the freedom to express themselves clearly and provide more thorough answers. Open-ended questions were advantageous in qualitative research because they enabled participants to give detailed and comprehensive responses, leading to rich and nuanced data for analysis (Braun & Clarke, 2019). To ensure the validity of the study's results, the instrument used underwent a thorough validation process conducted by three psychometricians.

Data Generation and Selection of Co-participants or Co-researchers

The paper utilized in-depth interviews with the participants, employing a semi-structured interview format consisting of open-ended questions that will allow participants to express themselves freely. These interview questions underwent validation by experts to ensure the paper's validity and reliability. The paper employed purposive sampling, selecting participants based on specific criteria to ensure the accuracy and reliability of the study.

Data Gathering Procedure

Before conducting the interview process, the researchers obtained informed consent from the 4 participants. The researchers conducted semi-structured interviews while utilizing open-ended questions. Location, time, and modality of the interview were mutually agreed upon by both the researcher and participant. Interview responses were recorded via audio-visual recording devices. Finally, after the interview, the researchers transcribed and analyzed the data collected from the participants. This paved the way to identify any patterns and themes that emerged.

Data Analysis

The researchers used Interpretative Phenomenological Analysis (IPA) in qualitative research methodology to focus on exploring how individuals made meaning of their life experiences (Noon, 2018). The data were categorized into main themes and analyzed

following the guidelines of interpretative phenomenological analysis (Smith & Osborn, 2008).

After the data collection, it was transcribed into a written format, including all verbal and nonverbal elements such as pauses, intonations, and emphasis. Next, the researchers read and re-read the transcripts multiple times to become familiar with the data and develop an initial understanding of the phenomenon. After multiple readings, the researchers took note of the detailed and comprehensive findings from the data. After that, the researchers transformed the notes into themes that emerged from the coded data. Furthermore, the next stage involved looking for connections between emerging themes, grouping them according to their similarities, and providing each cluster with a label. Finally, the researchers wrote up the analysis and presented the findings clearly and concisely supported by quotes and examples from the data. Overall, IPA aimed to understand the subjective experiences of individuals and the meanings they attached to those experiences. It involved a process of data analysis and interpretation to develop a rich understanding of the phenomenon being studied (Smith et al, 2009).

1. RESULTS

Major Theme 1: Resource-Balancing Struggles

Resource-Balancing Struggles *Sub-theme 1: Time*	
Management Struggle	
Participant 1	“I'm really struggling with time management. When people say you're great because you can balance everything, that's not true.” (Hirap na hirap ako sa time management. Sa nagsasabi na ang galing mo kasi nababalance mo lahat that’s not true.)
Participant 2	“Sometimes it's really hard to manage, especially with deadlines.” (Minsan talaga ang hirap nyang i-manage then yung mga deadlines.)
Participant 3	“It's difficult because I feel like I struggled more in terms of time management.” (Mahirap siya kasi parang mas nahirapan ako in terms sa time management.)
Participant 4	“That's how difficult balancing time is.” (Ganon kahirap yung balancing ng oras.)
Time Insufficiency	
Participant 1	“My time in a day. It's like, you know, there's always something else to do right away, like there's no free time, you know?” (Yung time ko sa isang araw. Sobrang parang alam mo yun may kasunod ka agad na gagawin parang walang free time ba ganun.)
Participant 2	“You feel like there's never enough time, like there's always a shortage of time, because of course, when you're juggling between jobs, between your personal relationships as well.” (You feel like parang never enough yung time, parang laging kulang yung time, kasi syempre pag hassling ka between job, between your personal relationship as well.)
Participant 4	“Intense time and effort are needed.” (Kailangan ng intense time and effort.)

Sub-theme 2: Finance	
Financial Hurdles as a Breadwinner	
Participant 1	“Just thinking about your financial problems... it's intense how your budgeting goes from... even before you get paid, you've already allocated everything for your family.” (Iisipin mo pa lang yung financial problem niyo… grabe yung budgetting mo from… di ka pa na-sahod ubos na sa isip mo yung ibibigay mo para sa family mo.)
Participant 2	“There are times when it won't be enough, or I'll fall short.” (May time na hindi sya aabot or masho-short ako.)
Participant 4	“Since I have a family now, its effect on me is that I really need to be even more frugal because I have a lot to divide. I divide everything I have among us because my family is really included in that.” (Syempre may family na ako so talagang ang naging epekto niya kasi sakin is kailangan ko pang lalong magtipid kasi syempre madami akong hinahati-hati. Hinahati-hati ko yung ano yung kung ano man yung meron ako hati-hati ko yung samin kasi talagang ang family ko naka include na yan.)

The major theme of resource-balancing struggles among female breadwinner students delves into the challenges of managing time and finances, revealing the emotional complexities of juggling academic, work, and personal life commitments. This theme emphasizes the relentless negotiations required to maintain balance and sheds light on the nuanced difficulties these individuals face in fulfilling their multifaceted roles. Within this, the sub-theme of time dynamics explores the overwhelming challenges and emotional toll of orchestrating a delicate equilibrium, highlighting the constant negotiation for time and the relentless temporal challenges these students confront in their daily struggles. Additionally, the examination of financial struggles within this context unveils their emotional impact on various dimensions, shedding light on how economic stressors influence not only academic pursuits but also permeate the overall quality of life. This sub-theme emphasizes the intricate relationship between financial burdens and the multifaceted roles these students navigate, adding depth to the understanding of their complex emotional landscape.

Major Theme 2: Interpersonal Turmoil

Interpersonal Turmoil *Sub-theme 1: Family*	
Conflict with Family	
Participant 1	“We're extremely irritable with each other.” (Super irate namin sa isa’t isa.)
Less Interaction with Family	
Participant 1	“I'm not always at home.” (Wala ako lagi sa bahay.)
Participant 2	“Now, my interaction with my family is much less, not like before when I used to live with them.” (Ngayon yung interaction ko sa family ko mas less hindi na gaya ng dati na nakatira pa ako sa kanila.)

Sub-theme 2: Peers	
Disconnected from Classmates	
Participant 1	“You'll feel like you're disconnected from your classmates because they have more time since I'm still irregular, right? So they have more time to spend with each other.” (Mafi-feel mo na parang disconnected ka sa mga kaklase mo because they have more time kasi irregular pa ako diba, so they have more time to spend with each other.)
Comparison with Peers	
Participant 1	“I think about my classmates like they need to study without having to work. Why do I have to study while working?” (Naiisip ko yung mga kaklase ko like kailangan nila mag aral nang hindi sila nag wowork, bakit ako kailangan kong mag-aral habang nag wowork.)
Participant 2	“You'll think, I'm still young, I have so many things to think about compared to my peers, right? My classmates who don't work, they can still hang out.” (Iisipin mo ang bata ko pa, ang dami-dami ko ng iniisip compared sa mga kaano ko diba. Yung mga kaklase ko na hindi nagwo-work, nakakagala pa sila.)

Interpersonal turmoil explores the intricate social dynamics of female breadwinner students, encompassing familial relationships and connections within the academic environment. It delves into the emotional intricacies within the family unit as students strive to meet expectations while balancing breadwinning responsibilities, and highlights the challenges of establishing connections with peers, emphasizing the emotional dimensions of isolation. Interpersonal turmoil emerges as a complex interplay of familial and peer relationships shaping these individuals' emotional landscape. Within this, the family sub-theme exposes the toll on familial relationships and the emotional challenges of feeling disconnected, while the peers sub-theme uncovers the psychological impact of detachment from the academic social fabric, enriching our understanding of their interpersonal struggles.

Major Theme 3: Multifaceted Role Challenges

Multifaceted Role Challenges *Sub-theme 1: Balancing of Personal Priorities*	
Commitment Battles	
Participant 1	“Because there are times when they all come at once.” (May times kasi na sabay sabay sila.)
Participant 3	“Now for me, it's like there are so many priorities. Mixed, there's so much to do, so many tasks to finish.” (Ngayon sa akin, parang ang daming priorities. Halo-halo, ang daming pwedeng gawin, ang daming gagawin, ang daming kailangan tapusin.)
Participant 4	“A woman with no rest.” (Babaeng walang pahinga.)
Academic Strain and Grade Pressures	
Participant 1	“There will be subjects that you'll have to neglect, especially when you're working, of course you won't be able to maintain your grades.” (May mapapabayan at mapapabayan ka especially sa subjects, syempre hindi mo mamementain yung grades.)
Participant 2	“Maybe when I was in my first year, my grades were really high, but when I started working, that's when they declined, seriously.” (Siguro nung first year ako, ang tataas talaga ng grade ko kaso nung nagwork na ako, dun na sya nag decline as in.)
Struggling to Establish and Maintain Focus	
Participant 1	“You'll lose your focus on what's important to you.” (Mawawala ka sa ano mo eh focus mo.)
Participant 3	“When your activities become mixed up, it's sometimes hard to focus.” (Kapag parang halo-halo yung mga nagiging, ano mo, yung mga ginagawa mo. Parang minsan, may times na mahirap mag-focus.)
Seeking for Personal Time	
Participant 1	“I still try to find time for myself.” (Naghahanap pa din ako nang sarili kong time para sa sarili ko.)
Participant 2	“I also need to think about myself.” (Kailangan ko rin isipin ang sarili ko.)

Concern in Sibling's Future	
Participant 3	"It's tough now, I also need to consider how to provide for my siblings' daily needs." (Hirap na ngayon, kailangan iisipin mo din yung pang papano kapakanan ng buhay ng kapatid mo, yung pang-gastos namin sa pang araw-araw.)

Sub-theme 2: Fulfillment of Family Obligations	
Familial Reliance	
Participant 2	"They rely on me more because they know I have income, so they know they can turn to me anytime, whatever happens." (Mas inaasahan ka nila kasi they know na may income ka, so they know na pwede ka nilang takbuhan anytime whatever happens.)
Participant 3	"As their older sister, I'm really the one trying my best to fulfill my responsibilities to them." (As a… ate nila, ako na lang din talaga yung, pinipilit ko na lang din talaga na magawa yung responsibilidad sa kanila.)
Participant 4	"I feel like Wonder Woman, wondering if this is really my role now, if I can truly be the leader of my family." (Para nga akong si wonder woman na parang, naku, heto na ba talaga ako, pwede na akong maging kapitan del baryo ng pamilya ko.)

This theme examines the academic and personal challenges stemming from the dual roles of being a student and a breadwinner, examining the difficulties in balancing academic pursuits with breadwinning responsibilities and the emotional toll it takes. Within this theme, the sub-theme of Fulfillment of Family Obligations highlights individuals' deep sense of duty towards their family members, emphasizing their role in supporting their family emotionally, financially, and practically. It delves into the complexities of navigating familial dynamics while balancing personal aspirations, shedding light on the internal conflicts and practical commitments inherent in fulfilling family obligations. Through these experiences, individuals gain insights into the intricate challenges of managing multifaceted roles and the profound impact of their contributions on their loved ones' lives.

Major Theme 4: Internal Conflict: Family Loyalty vs. Independence

Internal Conflict: Family Loyalty vs. Independence *Sub-theme 1: Fulfilling Parental Commitments*	
Individual Sacrifices	
Participant 1	“When you say it's balanced, someone will really sacrifice.” (Yung sabihin mong balance siya, no, meron talagang magsa-sacrifice.)
Participant 2	“We can't gain anything without sacrifices.” (We can't gain anything without sacrifices.)
Participant 4	“I provided for their education until I didn't even think about giving myself a chance anymore because I prioritize them.” (Ako nagprovide sa pag-aaral nila hanggang sa parang hindi ko na naisip na bigyan ng chance yung sarili ko kasi mas inuna ko sila.)
Feelings of Fulfillment	
Participant 2	“I'm happy that I was able to provide for my family's needs, that's actually the reason why I'm working.” (I'm happy na I was able to provide sa needs ng family ko, that's the reason actually why I'm working.)
Participant 3	“I'm happy, of course.” (Masaya, syempre.)
Participant 4	“Maybe because it's truly from the bottom of my heart to help my family, because that's my passion, knowing the hardships they've been through.” (Siguro dahil it is from the bottom of my heart na tumulong din sa family talaga kasi yan na yung passion ko kasi alam ko ang hirap na pinagdaanan nila.)
Achieve Parental Wishes	
Participant 3	“Our mom and dad want us to finish our studies.” (Gusto nung mama at papa namin na makapagtapos po kami.)

Sub-theme 2: Contemplation of Abandonment of Family Support	
Rejecting Familial Support	
Participant 1	“I thought, what if I just give up on all of them and focus on myself? After all, I can manage on my own. I can help them, what if I just focus on myself and stop helping them? Would my mind still be too cluttered? Because if I become independent and live separately, I can do it. I can stay in a dorm, I can rent my own apartment. With my own salary, I can support myself, I won't help them.” (Sabi ko what if i-give up ko nalang sila lahat mag sarili nalang ako tutal kaya ko naman pala. Kaya ko nga tumulong sa kanila what if solohin ko na lang sarili ko, hindi na ako tumulong sa kanila. Masyado pa bang magiging magulo yung isip ko kasi syempre kung magiging independent ako pag nag bukod ako, pwede kasi akong mag dorm eh kung tutuusin kaya ko. Kaya kong mag dorm, kaya kong mag apartment sa sarili ko. Sa sarili kong sahod kaya kong buhayin yung sarili ko, hindi ko sila tutulungan.)
Participant 2	“Sometimes you just want to stop.” (Minsan parang gusto mong tumigil.)

This theme delves into the complex emotional terrain where individuals wrestle with the profound tension between honoring familial bonds and pursuing personal autonomy. It encapsulates the delicate balance between meeting family expectations and pursuing individual aspirations, reflecting a conflict that shapes one's decisions and identity. Through an exploration of intricate emotions, values, and choices, this theme provides insight into the multifaceted dynamics defining individuals' journeys in reconciling family loyalty with the pursuit of independence. Within the sub-theme of fulfillment of parental commitments, the focus is on the sacrifices made to meet parental expectations, shedding light on the emotional toll and personal sacrifices involved in aligning with familial obligations. Conversely, in the sub-theme contemplation of abandonment of family support, individuals grapple with the challenging decision to reject familial support in favor of independence, revealing the nuanced thought processes and emotional dilemmas inherent in navigating the tension between autonomy and familial ties.

Major Theme 5: Emotional Drains

Emotional Drains: *Sub-theme 1: Confusion*	
Conflicted Emotions	
Participant 1	“I feel like I have a split personality. Different personalities, different genres, I need to adjust my character and personality depending on what I have going on from work to study. My personality at home should be different, my personality at work should be different, my personality while studying, my personality with my boyfriend, my personality with friends, but all of those are still me. At least I won't lose myself, I know within myself that's still me. Different people, different personalities.” (Feel ko may split personality ako. Iba ibang personality, iba ibang genre kailangan iadjust ko din yung character ko at saka personality ko, depende sa kung anong meron ako ngayon from work to study dapat iba yung personality ko sa bahay, iba yung personality ko sa work, iba yung personality ko sa study, iba yung personality ko sa boyfriend, iba yung personality ko sa friend pero lahat yon ako lang. At least hindi ako mawawala, alam ko sa sarili kong ako yon. Different people, different personality.)
Participant 3	“Unstable.” (Unstable.)
Participant 4	“This time, maybe I feel happy but also sad because, of course, it's like I'm back to studying again and at the same time, still being the breadwinner, it's like that.” (This time siguro parang masaya ako na parang nalulungkot kasi syempre parang bumabalik sakin yung ano na, ito na naman ako nag-aaral na naman tas at the same time breadwinner ka pa din parang ganun.)

Sub-theme 2: Sadness	
Persistent Feelings of Sadness and Breakdowns	
Participant 1	"That's tough, it really leads to burnout, seriously." (Mahirap yon, nakaka burn out as in.)
Participant 2	"Although there are times, of course, when you have breakdowns because it's overwhelming, sometimes they all come together like that, that's how responsibilities are." (Although may mga time syempre na nagbe-breakdown ka kasi syempre overwhelming, parang minsan nagsasabay-sabay sila eh, ganun talaga pag responsibilities.)
Participant 3	"Sad." (Malungkot.)

Sub-theme 3: Burnout	
Emotional Exhaustion from Multitasking	
Participant 1	"That's really tough, it leads to burnout, seriously." (Mahirap yon, nakaka burn out as in.)
Participant 2	"Of course, it's also stressful." (Syempre nakakastress din.)
Participant 3	"Drained because, of course, there's a pile-up of tasks at school, at home, and also at work." (Drained kasi, syempre, ano nga po, ayun nga patong-patong nga po yung mga ano, mga ginagawa sa school, sa bahay, tapos sa work din po.)
Participant 4	"Sometimes you just feel like crying because it's getting heavy, and you're thinking to yourself, until when? And you're wondering when you'll stop? But because you know, you feel within yourself that they need you, you can't stop." (Minsan parang gusto mo ng umiyak kasi mabigat na din kasi iniisip mo sa sarili mo na, hanggang kailan? Tapos iniisip mo kailan ka titigil? pero dahil alam mo eh, ramdam mo sa sarili mo na kailangan ka nila, hindi ka pwedeng tumigil.)
Feelings of Unfairness	
Participant 1	"Life is really unfair." (Life is unfair talaga.)

Emotional drains explore the psychological toll experienced by female breadwinner students, focusing on the emotional challenges they encounter daily. It encompasses a range of experiences, including stress, sorrow, exhaustion, and emotional fatigue, significantly impacting mental well-being. Emotional drains stem from various sources like work pressure and personal relationships, manifesting as confusion, sadness, and burnout. The sub-theme of confusion explores the challenges of managing identities across different life domains, exacerbated by societal expectations. The Sadness sub-theme delves into persistent feelings of despair and emotional breakdowns, shedding light on the sustained emotional toll of being a breadwinner. Lastly, the burnout sub-theme uncovers profound exhaustion and disillusionment resulting from prolonged stress, emphasizing the importance of self-care and support to prevent and address burnout.

Major Theme 6: Early-life Experiences

Early-life Experiences *Sub-theme 1: Adaptability of Persona*	
Early Maturity	
Participant 2	"I feel like my path is more inclined, like I can see my goal more clearly, and it feels like I'm more mature." (Feeling ko mas inclined yung path ko, parang mas nakikita ko yung goal ko and then yung nga parang feeling mo mas mature ka.)
Participant 3	"I've become more mature, more aware of reality." (Mas naging mature, mas naging parang mulat sa realidad talaga.)
Early Recognition of Hardships	
Participant 1	"I saw my situation even when I was young. I saw my family's situation, like it was really difficult." (Nakita ko na yung situation ko bata pa lang ako. Nakita ko na situation ng family ko na like sobrang hirap.)
Participant 4	"I grew up in a destitute family, so we are admittedly, that's where I come from, but maybe that was the way for me to become aware, because there are nine of us siblings. So even when I was young, I realized that this is life, life is hard." (I grew up in a destitute family, so we are admittedly ako dun pero iyon siguro ang way para mamulat ako na kasi nine kaming siblings. So maliit pa lang ako namulat ko na eto pala yung buhay, mahirap ang buhay.)

Sub-theme 2: Loss of Youthful Exploration	
Neglected Youthful Journeys	
Participant 2	"It's like this is too much for me to take, like I'm just young, like I should be focusing on one thing but at the same time." (Parang this is too much for me to take, parang I'm just young parang I should be focusing on one thing but at the same time.)
Participant 4	"I learned to earn a living, actually, I stopped studying because of my siblings, I gave way so they could finish even just high school. So I provided for their education until I didn't even think about giving myself a chance anymore because I prioritized them." (Natuto ako maghanap-buhay, actually, tumigil ako ng pag-aaral dahil yung mga kapatid ko, nag give way ako para makatapos sila kahit high school lang. So ako nagprovide sa pag-aaral nila hanggang sa parang hindi ko na naisip na bigyan ng chance yung sarili ko kasi mas inuna ko sila.)

This theme delves into the formative nature of individuals' early experiences, shaping their perspectives, behaviors, and identities. By exploring childhood and adolescent encounters, including family dynamics and educational interactions, the theme uncovers the lasting impact of these foundational moments on individuals' lives. It aims to unravel how past experiences contribute to the development of personalities, relationships, and life trajectories. The sub-theme of Adaptability of Persona examines the resilience and flexibility cultivated by female breadwinner students, highlighting how they navigate challenges and develop versatile skill sets. This exploration sheds light on the accelerated maturation process experienced by these students, impacting their personal and academic trajectories and shaping their worldview and decision-making from an early stage in life.

Major Theme 7: Enduring and Positive Mindset

Enduring and Positive Mindset *Sub-theme 1: Empowering Resilience and Persistence*	
Strength Amidst Challenges	
Participant 1	“My perspective now is that nothing can stop me anymore. I won't be knocked down by any challenges I face because I've overcome them all at a very young age. What more in my future?” (Yung perspective ko ngayon na walang… wala nang makaka-hadlang sa akin like hindi na ako kayang patumbahin ng kahit anong challenges na haharapin ko pa kasi nakaya ko yun lahat nang at the very young age what more sa future ko.)
Participant 2	“So I also motivate myself because my family needs me. Not only that, but I also have personal goals that I have to achieve, and if I stop, it might be harder for me to get back up.” (So sakin mino-motivate ko din yung sarili ko and my family needs me. Hindi lang yon, pero ako din sa sarili ko may mga personal goal ako na I have to achieve and if I will stop baka mas mahirapan akong bumangon ulit.)
Participant 3	“It strengthens me more.” (Mas pinapatatag lang din yung loob.)
Participant 4	“I just think of it as something that strengthens me even more, that I should strive even harder.” (Parang inaano ko na lang na parang pampalakas lalo siya sa akin, na mag-strive pa ako.)
Acceptance and Determination	
Participant 1	“Maybe that's just the fate I've been dealt.” (Siguro ganon lang yung life na kinahinatnan ko.)
Participant 2	“I understand that not everyone's situation is the same, so for me, this is my experience and I'll just deal with it.” (Understood ko na hindi naman pare-parehas ng situation diba, so sakin this is my experience siguro I'll just deal with it na lang.)
Participant 3	“Even if it's difficult, it really needs to be done.” (Kahit mahirap, kailangan talagang gawin.)
Adaptability and Growth Mindset	
Participant 1	“It's like going with the flow. When I encounter problems, I don't have a routine, but I know I have my own solutions.” (Parang go

	with the flow like pag namroblema ako this time, wala akong routine pero alam kong may solusyon ako sa sarili ko.)
Participant 2	“For me, it's about experience and the mindset I have. I want to acquire more skills, and at a younger age, I can achieve my goal, so it's all good for me.” (For me, it's experienced, and sa mindset na meron ako, I want to collect more skills, and at an earlier age mas maa-achieve ko yung goal ko, so it's all good for me naman.)

Sub-theme 2: Faith and Positivity	
Optimism	
Participant 1	“I always say I'm very independent.” (Sabi ko nga eh napaka independent ko.)
Participant 2	“I'm actually more positive about it rather than negative.” (I'm actually more positive about it rather than negative.)
Participant 4	“I can't take it off, so no matter how difficult it gets, I take it as positive so that what comes back to me is also positive.” (Hindi na naalis sakin yun kaya kahit anong hirap, tinetake ko sya as positive para ang balik sakin is positive din.)
Divine Trust	
Participant 4	“For me, I take it lightly because I know that God is there. I know, He knows my efforts and the ambitions in my heart, the goals I want to achieve.” (Sa akin kasi ni-take ko sya as light dahil alam ko naman na nandyan ang Diyos. Alam ko, alam Niya yung pagsisikap ko at yung nasa puso kong meron akong ambitions, meron akong goals na gusto kong marating.)

This theme explores how individuals harness resilience, optimism, and inner strength to confront life's challenges. It highlights the transformative power of resilience and persistence, enabling individuals to bounce back from setbacks and stay focused on their goals. Additionally, it delves into the influence of faith and positivity in providing individuals with hope and a sense of purpose amidst adversity, emphasizing their role in shaping outlook and experiences. Through resilience, persistence, faith, and positivity, individuals can cultivate a mindset that enables them to navigate life's challenges with courage and optimism, ultimately thriving in the face of adversity.

Major Theme 8: Program Recommendations

Program Recommendations	
Livelihood Support	
Participant 1	“Livelihood support to ease the burden between work and study.” (Livelihood with regards yung parang alam mo yung hindi ka na mahihirapan between work and study.)
Participant 3	“Programs for orphaned individuals.” (Program para sa mga naulila.)
Skill Development Programs	
Participant 1	“Programs that add skills, like a one-week seminar.” (Mga program na makakadagdag ng skills like kahit 1 week seminar.)
Financial Assistance	
Participant 1	“Financial assistance for working students that doesn't require grades.” (Financial assistance for working students na hindi nag rerequire ng grades.)
Participant 3	“Financial support.” (Financial support.)
Scholarship	
Participant 1	“More scholarships.” (More scholarship.)
Participant 4	“Scholarships, because besides those provided by the government, there should be some specifically for individuals like Ramil, perhaps for breadwinners, or at least provide them with additional support, because honestly, it's very difficult.” (Scholarships, kasi maliban sa binibigay ng government, na yung mga katulad ni Ramil, sana meron din specifically for them, mga breadwinner, or bigyan man lang sila ng karagdagan, kasi sa totoo lang napakahirap.)

Program recommendations present practical interventions to support female breadwinner students, focusing on strategies to enhance livelihoods and personal growth. It includes initiatives like livelihood support through resources and assistance for sustainable income generation, such as microloans and vocational training. Skill development programs are emphasized to empower individuals with new competencies, while financial assistance programs, including scholarships, grants, and subsidies, alleviate the financial burden of education and business ventures. These recommendations underscore the importance of investing in initiatives that cater to diverse needs, ultimately creating pathways to socio-economic advancement and empowering individuals to build better futures.

DISCUSSION

Major Theme 1: Resource-Balancing Struggles

Resource-Balancing Struggles investigates the intricate challenges individuals face when managing various responsibilities, as highlighted in Kim and Chang's (2023) study on female breadwinners navigating work and family demands. Wong and Wong's (2020) longitudinal research underscores the pivotal role of effective time management in alleviating these challenges, particularly among students, emphasizing its impact on academic performance and overall well-being. Furthermore, The Herald's (2022) examination sheds light on the financial dimension of these struggles, focusing on student breadwinners' difficulties balancing work and education, with additional barriers faced by those from marginalized backgrounds.

Major Theme 2: Interpersonal Turmoil

The studies in Interpersonal Turmoil are connected by their exploration of how relationships affect individuals. Thompson and Davis (2017) show how family dynamics influence student achievement, stressing the importance of familial support. Hernandez and Gomez (2019) focus on students feeling disconnected from peers, emphasizing the need for inclusive environments to enhance academic engagement and well-being. Both highlight the significance of relationships in shaping educational experiences.

Major Theme 3: Multifaceted Role Challenges

Multifaceted Role Challenges explore diverse challenges individuals encounter within various contexts. Johnson and Smith's (2022) study examines the economic impact of female breadwinners, highlighting their contributions to household income and societal trends. The concept of the tagasalo personality, as described by Urdabe (2001) and cited in Perez (2022), underscores the familial reliance individuals experience, emphasizing complex interpersonal dynamics within families. Additionally, Ceniza et al. (2017) delve into the academic strain faced by Filipino students due to family obligations, revealing the significant role families play in shaping educational experiences and emphasizing the importance of cultural understanding in academic outcomes.

Major Theme 4: Internal Conflict: Family Loyalty vs. Independence

This theme explores the internal conflict experienced by participants as they grapple with fulfilling parental commitments while considering the possibility of abandoning family support, highlighting the sacrifices made and the debates surrounding independence. Their narratives reveal the intricate balance between familial loyalty and individual autonomy, emphasizing the challenges of reconciling personal aspirations with familial expectations. Drawing from Carandang's (2008) insights on family-oriented cultures, the study sheds light on the complexities of managing diverse roles within the family unit, stressing the importance of open communication and psychological support to navigate these challenges. Smith and Davis's (2020) research further underscores the need for interventions that empower individuals to navigate their roles while fostering personal growth and autonomy, contributing to a deeper understanding of the psychological dynamics within families.

Major Theme 5: Emotional Drains

Emotional Drains delves into the psychological toll experienced by individuals, particularly female breadwinners, as they navigate the complexities of balancing work, family, and societal expectations. Meisenbach's (2010) study highlights the conflicting emotions faced by female breadwinners, emphasizing the emotional strain inherent in juggling multiple roles. Jessica Guynn (2023) discusses the concept of the "second shift," revealing how increasing earnings among women often lead to additional household duties and emotional exhaustion. Handog's (2022) article underscores the profound emotional burden on breadwinners, emphasizing their struggles to balance providing for their families with their own well-being and concerns about the future.

Major Theme 6: Early-life Experiences

Early-life Experiences examines how childhood responsibilities and cultural traditions shape individuals. Borchet et al. (2021) highlight the Filipino tradition of assigning household duties to children, instilling values of responsibility and discipline. Lopez and Garcia (2018) explore the challenges faced by young breadwinners in Hispanic households, revealing how early exposure to economic hardships shapes resilience and responsibility. These studies reveal the complex interplay between early-life experiences, cultural traditions, and life trajectories.

Major Theme 7: Enduring and Positive Mindset

Enduring and Positive Mindset explores the empowering qualities of resilience, persistence, faith, and positivity, particularly among breadwinners. Johnson and Smith (2019) highlight how breadwinners demonstrate strength by accepting difficulties, remaining determined, and embracing adaptability with a growth mindset. Garcia and Martinez's (2020) study emphasizes the role of faith and positivity in fostering optimism among breadwinners facing financial strain. Together, these studies illustrate how breadwinners navigate challenges with inner strength and optimism, ultimately sustaining hope for a better future.

Major Theme 8: Program Recommendations

The program recommendations for supporting female breadwinner students include early intervention programs focusing on coping mechanisms, stress resilience, and positive self-perception. Livelihood support programs offer direct financial aid, while skill development initiatives enhance employability. Financial assistance like grants and scholarships empower students to pursue education. Despite no specific studies supporting these recommendations, they draw from established practices for supporting students in similar circumstances.

Conclusions

1. The analysis of the lived experiences of female breadwinner students highlights the participants' pronounced emphasis on their conflicting experiences. They grappled with conflicting responsibilities, attempting to navigate the challenges of managing academic studies and employment alongside their family obligations.
2. These challenges included juggling multiple responsibilities simultaneously and dealing with conflicting emotions about their roles as breadwinner students and their responsibilities at school, work, and home.
3. Furthermore, the researchers identified the presence of paradoxes within the participants' responses and statements. It shows that their experiences were diverse, showcasing different perspectives that transcend a simple categorization into purely positive or negative outcomes. The findings revealed inherent contradictions within the results, with some participants reporting positive outcomes from their experiences while others faced discernible negative impacts. The differences in results make the study more intriguing and complex.

Recommendations

1. For Breadwinner Students. They might consider seeking out mentorship programs that pair students with successful professionals who can provide guidance, support, and networking opportunities. Additionally, they may find value in exploring and joining support networks, both online and offline, where they can share experiences, strategies, and advice. Being part of a community can offer them emotional support and practical insights, potentially reducing feelings of isolation.
2. For Parents. They might consider attending workshops or seminars that focus on understanding and supporting breadwinner students. These events can provide valuable information on navigating the unique challenges their daughters face and contribute to fostering a more supportive home environment.
3. For the Society. They might consider raising awareness about the challenges faced by female breadwinner students. Encouraging discussions in local forums, schools, and community centers can promote understanding and empathy. Advocating for policies and

programs that recognize and support the contributions of these individuals is a choice that can positively impact society.

4. For the Community. Communities, based on the study findings, have the option to develop programs tailored to the needs of breadwinner students. This may involve creating mentorship initiatives, organizing financial supports, and hosting community events that foster a sense of belonging. Establishing a supportive environment is a choice that can benefit both individuals and the community as a whole.

5. For Researchers. They may find value to expand their knowledge about this study by considering collaboration with experts from diverse fields. Engaging with professionals in sociology, psychology, economics, and gender studies can bring varied perspectives to the research. This collaborative approach offers the opportunity to explore a comprehensive understanding of the challenges faced by female breadwinner students, contributing to a richer and more nuanced body of knowledge.

6. For Future Researchers. They might consider building upon the findings of this study, exploring specific aspects in greater detail or investigating related areas. This study serves as a foundation, and the choice to delve into evolving dynamics, changing societal attitudes, and emerging support systems for female breadwinner students can contribute to the ongoing body of knowledge.

Compliance with Ethical Standards

The researchers distributed an informed consent form, ensuring that participants were fully aware of the study's purpose, potential risks and benefits, and their rights as participants. Alongside safeguarding confidentiality and privacy by protecting participant anonymity, the study assured participants that any collected information would be kept confidential and utilized exclusively for research purposes.

Moreover, these ethical measures aligned with and provided additional protection under the Data Privacy Act of 2012. This legislation established standards for processing personal information, emphasizing the importance of informed consent, data security, and privacy rights. By adhering to the principles outlined in the Data Privacy Act, the researchers demonstrated a commitment to legal and ethical standards in handling participant data, thereby enhancing the overall integrity of the study. Participants could take confidence in the fact that their rights and privacy were further safeguarded by the provisions of the Data Privacy Act of 2012.

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THE COPING SELF-EFFICACY OF STUDENTS LIVING IN BOARDING HOUSES

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ABSTRACT

The purpose of this study was to examine the coping self-efficacy of students living in boarding houses. This study utilized the descriptive quantitative research design. One hundred eighty college students from Kabankalan Catholic College completed the Coping Self-efficacy Scale. Results indicated that the participants that had the highest level of coping self-efficacy when grouped according to program cluster were the College of Arts and Sciences. In contrast, the group that got the lowest level of coping self-efficacy was the College of Business and Accountancy, whereas the highest level of coping self-efficacy in terms of sex where the females compared to males. This study showed that the College of Arts and Sciences had a higher level of coping self-efficacy compared to other program clusters. The results of this study implied that the college students of Kabankalan Catholic College experience a moderate level of Coping Self-efficacy, wherein they are left with no alternative but to adapt and become independent while living in the boarding house. The findings of this study implied that for students to improve their coping self-efficacy, they need to pray and practice meditation.

Keywords: *Coping Self-Efficacy, Boarding houses, program cluster, sex, college of education, college of arts and sciences, college of business and accountancy*.

INTRODUCTION

Living in a boarding house is necessary for students who come from far places. One manifestation of this process is leaving the family home and establishing a residence of one's own especially when he/she enters college. This point in an individual's academic life is considered to be a combination of the external and internal stresses from one's surroundings to be successful, goal path, financial stress, social pressure, and concerns about uncertain futures, social problems, and opportunities, thus requiring preparation and focus with often conflicting priorities. As a result, many of the students living in boarding houses' adjustment success depends of the student's adjustment is dependent on their coping practices (Tattao, 2016).

Additionally, students living in boarding houses experience academic and family difficulties. This can be attributed to the fact that living away from home requires a lot of adjustments on the part of the students as well as coping with the novelty of subjects learned in college. Also, comforts are given up and one has to face the rigors of living independently. On the other hand, social area is considered as never a problem because students living in a boarding house gain friends along the way as they interact and relate with their board mates. College students employ both problem-focused and emotion-focused coping strategies since this is ultimately aimed at reducing or managing the distress that is associated with stressful situations. However, they always utilize emotion-focused coping strategies. This is attributable to the characteristics of adolescents where they are in the process of developing their emotional maturity and tend to do activities that gain approval and acceptance from peers. Furthermore, college students are transitioning from living with their parents to living on their own. A set of novel responsibilities and roles comes into their lives as the students make a move to a new stage (Tattao, 2016).

Self-efficacy is generally known as an expectation deeply linked to a specific task or situation, various studies have shown the existence of a broader belief—that is, basic self-perceived competence in the face of a wide range of demands (Volz et al. 2019).

The current study aimed to examine the level of coping self-efficacy of students living in boarding houses. This is to provide valuable information for students to realize the importance of coping as they are living on their own. It was also observed that there are only limited number of researchers on this field. Therefore, this study helped fill the gaps in the area and to contribute a deeper understanding of this construct. The researchers believed that the findings of this study were able to present how students can cope with challenges and difficulties.

Research Questions

1. What is the demographic profile of the students living in boarding houses when grouped according to the:

1.1 Sex;

1.2 Academic Program/Program Cluster?

2. What is the level of coping self-efficacy of the students living in boarding houses?

3. Is there a significant difference in the level of coping self-efficacy of the students living in boarding houses when grouped according to their demographic profile?

METHODOLOGY

Research Design

This study utilized descriptive-comparative research design. It is intended to describe the characteristics or behavior of a particular population in a systematic and accurate fashion (Gall et al. 2003) and to make comparisons of the likeness and differences among phenomena whether certain factors tend to accompany certain conditions (Goodwin & Goodwin, 1996, as cited in Romeyn, 2010). It is based on the objective of determining the level of coping self-efficacy of students living in boarding houses and to examine the differences among variables. The researchers used the survey method form where a questionnaire will serve as an instrument in collecting the data needed.

Participants of the Study

The participants of this study were the college students of Kabankalan Catholic College A.Y. 2022-2023. A total of 180 students (48 males and 132 females) were purposively selected to participate. Specifically, participants were selected from the following program cluster: Bachelor of Science in Psychology, Bachelor of Arts in Philosophy, Bachelor of Secondary Education major in Science, English, Math, Filipino, and Physical Education, Bachelor of Science in Business Administration major in Marketing Management and Financial Management, Bachelor of Science in Accountancy, Bachelor of Science in Information Technology. The participants were identified using the snowball sampling technique, which is a non-probability sampling approach in which new units are recruited to form part of the sample by existing units (Nikolopoulou, 2022).

Research Instrument

The researcher utilized questionnaire to discover the coping mechanism of self-efficacy in Kabankalan Catholic College of first year to third year students living in a boarding house. The researcher used the instrument title Coping Self-Efficacy Scale (CSE) of Chesney et al (2006).

The coping self-efficacy (CSE) scale, a 26-item assessment of one's confidence in engaging in coping behaviors when confronted with problems in life, was the subject of Chesney et al. (2006) into the psychometric properties. The information came from two randomized clinical trials that assessed the effectiveness of the theory-based Coping Effectiveness Training (CET) intervention in alleviating psychological suffering and boosting mood in people managing chronic illness. The 348 participants were sad, HIV-positive, and sex-with-male men. Participants were evaluated before and after the intervention and then randomly allocated to the intervention or comparison conditions. The CSE scale, coping mechanisms, and indicators of social support, psychological discomfort, and well-being were all included as outcome variables. According to their research findings, all three criteria have good internal consistency and test-retest reliability. These components, according to concurrent validity analyses, measure self-efficacy for various forms of coping. The employment of problem- and emotion-focused coping strategies was shown to be associated with residual zed change ratings that were predictive of decreasing psychological distress and increasing psychological well-being over time. The CSE scale offers a tool to monitor changes in CSE over time in intervention studies and gauge a person's perceived capacity to deal with life's obstacles.

Reliability and validity of the study. The CSE scale, coping methods, and measures of social support, psychological distress, and well-being were all included as outcome variables. According to their findings, all three criteria have strong internal consistency and test-retest reliability. According to concurrent validity analyses, these components assess self-efficacy for various ways of coping. Adopting problem- and emotion-focused coping techniques was associated with residual zed change evaluations that predicted decreasing psychological distress and increasing psychological well-being over time. The CSE scale can be used to evaluate changes in CSE over time in intervention studies and assess a person's perceived ability to deal with life's challenges (Chesney et al. 2006).

Data Gathering Procedures

Prior to the administration of the survey, the researchers sent the letter to conduct the study from the researchers' mentor in Research in Psychology 2 subject to the Department Dean of College of Arts and Sciences, College of Education, and College of Business as a gesture of courtesy.

The sample size was 183 students determined through a snowball sampling technique, and 180 responded, the researchers did the survey using questionnaires. The first part of the questionnaire was the participant's name, program cluster, course, year, and sex. The second part is a brief discussion of the coping self-efficacy scale and how to answer it and the third or the last part of the questionnaire, the questionnaire consists of 26 items. Upon the approval of the request, the researchers distributed the questionnaires to those students living in boarding houses. In distributing the questionnaires, the researchers went to their respective classrooms to reach the participants. They were given 15 minutes to answer the survey. The Researchers

encoded, tallied and tabulated the data gathered and was submitted to the statistician for analysis and interpretation.

Data Analysis

The application of statistical tools and the analysis of the data was dependent on the data to be analyzed and the problems formulated. To determine the profile of the participants, frequency, and percentage will be used. In determining if there is a significant difference in the coping self-efficacy of the students living in boarding houses when grouped according to sex and program cluster, a t-test for independent samples and One-Way Analysis of Variance (ANOVA) was used.

The computed mean scores for the coping self-efficacy of students living in boarding houses were interpreted using the following guide adapted from the main author of the coping self-efficacy scale Chesney, et al (2006):

Mean Range	Interpretation
0-4	Cannot do at all
5-9	Moderately certain can do
10	Certain can do

Results

Table 1.

Demographic profile of the students living in boarding houses.

Profile	Frequency	Percentage
Sex		
Male	48	26.7
Female	132	73.3
Academic Program/Program Cluster		
College of Business and Accountancy	32	17.8
College of Education	111	61.7
College of Arts and Sciences	37	20.6
Total	180	100.0

Table 2.
Level of Coping Self-Efficacy of the students living in boarding houses

Indicators	Mean	SD	Verbal Interpretation
Indicators	**Mean**	**SD**	**Verbal Interpretation**
Keep from getting down in the dumps.	6.08	1.93	Moderately certain can do
Talk positively to yourself.	7.38	2.08	Moderately certain can do
Sort out what can be changed, and what cannot be changed.	6.58	1.73	Moderately certain can do
Get emotional support from friends and family.	7.43	2.17	Moderately certain can do
Find solutions to your most difficult problems.	7.76	1.85	Moderately certain can do
Break an upsetting problem down into smaller parts.	6.44	1.82	Moderately certain can do
Leave options open when things get stressful.	6.65	1.95	Moderately certain can do
Make a plan of action and follow it when confronted with a problem.	7.02	1.79	Moderately certain can do
Develop new hobbies or recreations.	7.58	2.18	Moderately certain can do
Take your mind off unpleasant thoughts.	6.81	1.92	Moderately certain can do
Look for something good in a negative situation.	7.27	2.31	Moderately certain can do
Keep from feeling sad.	6.06	2.37	Moderately certain can do
See things from the other person’s point of view during a heated argument.	5.74	2.17	Moderately certain can do
Try other solutions to your problems if your first solutions don’t work.	7.31	2.22	Moderately certain can do
Stop yourself from being upset by unpleasant thoughts.	6.75	1.97	Moderately certain can do
Make new friends.	7.66	2.47	Moderately certain can do
Get friends to help you with the things you need.	7.22	2.31	Moderately certain can do
Do something positive for yourself when you are feeling discouraged.	7.86	1.83	Moderately certain can do
Make unpleasant thoughts go away.	6.72	2.01	Moderately certain can do
Think about one part of the problem at a time.	6.57	1.92	Moderately certain can do

Visualize a pleasant activity or place.	7.10	1.74	Moderately certain can do
Keep yourself from feeling lonely.	6.54	2.30	Moderately certain can do
Pray or meditate.	8.63	1.85	Moderately certain can do
Get emotional support from community organizations or resources.	6.03	2.34	Moderately certain can do
Stand your ground and fight for what you want.	7.67	1.98	Moderately certain can do
Resist the impulse to act hastily when under pressure.	6.49	2.11	Moderately certain can do

Table 3.
Difference Analysis on the level of coping self-efficacy of students living in boarding houses when grouped according to their demographic profile

Profile	Statistics	Level of Self-Efficacy
Sex	Mean	Male=6.95; Female=6.99
	U-test Coefficient	3013.00
	Probability Value	0.616
	Conclusion	Not Sig.
Academic Program/ Program Cluster	Mean	CBA=6.94, COED=6.95, CAS=7.08
	H-test Coefficient	0.547
	Probability Value	0.761
	Conclusion	Not Sig.

Not Sig. if p-value is greater than 0.05; sig. and highly sig. if p-value is less than 0.05 and 0.01, respectively.

DISCUSSION

Table 1 shows the demographic profile of students living in boarding houses which are consisting of 48 males (26.7%) and 132 females (73.3%). Moreover, in the table, the highest number of participants was the College of Education with 111 participants (61.7%) in the sample size.

The table shows that females take the highest number of students living in boarding houses and the College of Education has the highest number of students enrolled at Kabankalan Catholic College in it as visible in the registrar's record of the school. This study is supported by Brilliantes et al. (2022) which revealed that the majority of those residing in boarding houses are female students from distant areas without access to housing.

Table 2 shows the level of coping self-efficacy of students living in boarding houses. As shown in this table, the top three (3) indicators were as follows: Prayer or meditation, do something positive for yourself when you are feeling discouraged, and find solution to your most difficult problem as indicated in their respective means of 8.63, 7.86, and 7.76. This implies that in times of difficulties they experience in life they first pray to God and ask His guidance so that they can do something positive and find solutions to their problems. This is supported by the findings of the study of Wnuk (2023) which revealed that students who use coping mechanisms including prayer have been shown to have both improved reported mental and physical health as well as improve objectively assessed help outcomes. Furthermore, the study of Fisher (2020) showed that involvement in the community of religious or other local groups as well as offering support to those in need can help students' resilience. Lastly, according to Hao et al. (2020) training in problem solving can be defined as a process that helps a person develop problem solving skills and as a result increase the facility of effective coping. In addition, from a specific viewpoint, problem solving training solves people's difficulties in problem solving.

On the other hand, table 2 shows that the least three (3) indicators were as follows: See things from the other person's view during a heated argument, getting emotional support from community organizations or resources, and keep from feeling sad as indicated in their respective mean of 5.74, 6.03, and 6.06. Even if they receive emotional support from their community organizations or resources, they still cannot avoid being sad because they are alone at home or in their boarding house, and they will still experience homesickness and anxiety. If they are angry, other people's opinions will not help them because their anger is at the forefront, and everything will just fall on deaf ears. This is supported by the findings of the study of Rhokham (2021) which revealed that considering other people's point of view is an intentional process rather than something that is automatic. This implies that the student must work very hard to do it. Moreover, the study of Redman-Maclaren et al. (2019) showed that students are having a poor level of resilience after returning to their homes, as well as a decreased sense of connection to their family and community. Lastly, Lcsw-C (2022) stated that dealing with melancholy or sadness can occasionally feel insurmountable yet making a small effort to practice mindful and purposeful behavior can have a significant positive effect.

Table 3 shows the level of students living in boarding houses when grouped according to sex (Male=6.96; Female=6.99, p-value 0.616). In the results, it is visible that there are no significant differences between coping self-efficacy and sex. Female students report higher average self-efficacy than male students, although all students report higher than average self-efficacy (Fahle et al. 2019).

The level of students living in boarding houses when grouped according to program cluster (CBA=6.94; COED=6.95; CAS=7.08, p-value 0.761) shows that there are no significant differences between coping self-efficacy and program cluster. According to the research, students who have a strong feeling of efficacy believe they can complete even challenging activities. In the face of certain failures, these students intensify and

sustain their efforts to succeed. They approach tough or dangerous circumstances with the assurance that they are in control of them (Fratturar, 2018).

Conclusions

The purpose of this study was to ascertain the level of coping self-efficacy among students living in boarding houses at Kabankalan Catholic College. The results of the study shown that college students at Kabankalan Catholic College had a "moderately certain can do" level of coping self-efficacy. The College of Business and Accountancy has the lowest level of coping self-efficacy, whereas the College of Arts and Sciences has the highest level. When grouped according to sex, women outperform men in terms of having the highest level of coping self-efficacy. Additionally, the study's findings indicate that college students at Kabankalan Catholic College have a "moderately certain can-do" of coping self-efficacy, meaning they are left with no alternative but to adapt and become independent while living in a boarding house. It suggests that CSES is a useful tool for assessing the coping self-efficacy of students living in boarding houses. Furthermore, it could be drawn from the findings that more women are living in boarding houses as a result of the rise in the frequency of theft, rape, and other violent crimes in the Philippines, where women make up the majority of the victims. Women’s parents prefer that they board because they believe that they are more vulnerable to risk and danger. Compared to males who typically don't need to be picked up when they go home at night. Additionally, our participants' spiritual fortitude in God is greater as demonstrated by their expression of faith through prayers. They turn to God for strength and guidance on a daily basis as they navigate life. Lastly, the College of Education has a large number of participants since, according to the students enrolled at Kabankalan Catholic College, COED has a large number of enrollees. This study made the following recommendation: In this case, the guidance office can offer emotional help, for their students, and teachers can serve as models of encouragement. Students will observe them and take note of the ways of coping they employ on a regular basis, as well as make the online consultation once a week, if possible. Students require support and attention for what they are going through and instruction in managing or boosting their coping self-efficacy.

Recommendations

It recommended that school administrators and the school’s guidance office may create programs to address the problems of the students living in boarding houses, teachers are encouraged to be aware of what is happening, and students may experience issues at the boarding house, such as homesickness, loneliness and lack of emotional support. In these cases, the guidance office can offer emotional help, for their students, and teachers can serve as models of encouragement. Students will observe them and take note of the ways of coping they employ on a regular basis, as well as make the online consultation once a week, if possible. Students require support and attention for what they are going through and instruction in managing or boosting their

coping self-efficacy.

Compliance with Ethical Standards

The obligation of the researchers to act for the benefit of the respondents and support several moral rules to protect and defend the rights of others, prevent harm, and remove conditions that will causes harm. The researcher provides sufficient information and assurances about taking part to allow participants to understand the implications of participation to reach a fully informed, considered, and freely given decision about whether to do so, without the exercise of any pressure or coercion. Preserving confidentiality and anonymity is included, the names and other details of the participants were kept a secret by the researcher.

No conflict was arisen while conducting the study. The researchers have reviewed the study to guarantee that there is no someone's work was plagiarized by the researcher. The researcher identifies the results with no bias, and the results are purely for research use only.

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THE IMPLICATION OF INDIVIDUAL DIFFERENCES IN WORKING MEMORY CAPACITY ON THE STUDENTS' ENCODING PERFORMANCE

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ABSTRACT

The purpose of this study was to investigate the implications of individual differences in students' working memory capacity on encoding performance. Forty-nine (49) undergraduate Bachelor of Science in Industrial Engineering students at Visayas State University-Isabel participated in the study. The students were classified as having high, medium, or low working memory capacities (WMCs). The p-values of 0.05 for both the speed and accuracy of each classification were used to determine the significance of the differences. The Pearson correlation test was used to evaluate the relationship between the working memory capacity and the encoding performance of the students. The results revealed that although there were differences in the mean values of the adjusted mean square of error which were 83.80 (speed) and 109.11 (accuracy), the differences were not significant because the derived p-value was greater than the value of the confidence level at 0.05. Students with a low WMC exhibited slower encoding performance and higher output accuracy. Furthermore, no significant differences were seen in the students' encoding ability when categorized as having a high WMC.

Keywords: *Accuracy, ANOVA, Encoding Performance, Operations Span, Working Memory*

INTRODUCTION

Working memory plays a central role in all forms of complex thinking, such as reasoning, problem-solving, language comprehension, and encoding. Working memory is a component of overall memory and is defined as the capacity to simultaneously and actively store and process information (Baddeley, 2012). In this study, we use working memory to refer hypothetical cognitive system responsible for providing information required for ongoing cognitive processes, while working memory capacity (WMC) refers to an individual difference construct reflecting the limited capacity of an individual's working memory.

Several studies have been conducted to determine the effects of working memory capacity on various academic tasks. Studies have shown that working memory capacity affects students' performance in various academic tasks. Researchers have attempted to determine the impact of individual differences in working memory capacity on the performance of students, with or without distractions. Numerous studies have revealed that students who have memory difficulties may have deficits in encoding or typing tasks, storing, consolidating, retrieving, or accessing information. Some studies provide evidence that working memory may have a great effect and be influenced by individual differences in working memory capacity on reading comprehension (Christopher and Shelton, 2017; Foroughi et al, 2016), recall tasks (Kane and Engle, 2003), and reasoning (Grossnickle et al, 2016), but not in arithmetic tasks (Christopher and Shelton, 2017). Others have revealed that most low-WM individuals are more likely to be influenced by auditory distraction, as presented in the environment. However, no study has investigated the effects of individual working memory capacity on encoding or typing tasks.

Previous studies have focused on typing tasks anchored in auditory conditions, such as music or noise (e.g. Bramwell-Dicks et al., 2016). These researchers postulated that the presence of vocals in background music reduces typing performance. Another study revealed that music has a positive effect on task performance, depending on the music preferred by individuals (Young, 2003). In this study, we evaluated the novel hypothesis that individual working memory capacity affects the encoding performance of students during silence.

Gaps associated with working memory capacity make students reluctant to engage in typing or encoding tasks, as they tune in and out of the expected outputs of the undertaking. Within this context, students fail to elaborate on incoming information, thereby negatively affecting their encoding assignments. However, its function in encoding is especially evident, because encoding entails processing sequences of data or symbols that are produced and perceived over time. Working memory plays a critical role in the encoding tasks of a student, as they construct and integrate ideas from a stream of successive words in a text.

Today's highly technological and interactive society calls for students and professionals with a well-established level of competence in information and communication technologies to be utilized by various internal and external stakeholders

of an entity. Encoding information is a cognitive process through which thoughts, ideas, or questions are translated into words. Substantial evidence shows that individual differences in the estimates of working memory capacity reflect differences in how effectively people like students can develop their encoding capabilities (Bengson and Luck, 2017).

Although numerous studies have been conducted to evaluate the various factors affecting the encoding competencies of college students, this undertaking aimed to bridge the gap in extant literature by assessing individual differences in working memory capacity concerning students' encoding performance. Therefore, the present study was conducted.

Research Questions

The main purpose of this study was to investigate the implications of individual differences in students' working memory capacity on encoding performance.

Specifically, the research sought to answer the following questions:

1. What are the implications of individual differences in working memory capacity on encoding performance?
2. Are there significant differences in the encoding performance of students with low, medium, or high working memory?
3. Is there a correlation between working memory capacity and encoding performance?

METHODOLOGY

This study used a quantitative research method, specifically a descriptive survey. This approach is deemed most appropriate for this study as it describes the events aimed at discovering a causal relationship between WMC and students' encoding performance. Observations were conducted to record and view the subjects' performances under controlled conditions. The respondents of this study were forty-nine (49) Bachelor of Science in Industrial Engineering students at Visayas State University-Isabel, who had no reported hearing or vision problems that could impair the results of the study. The purposive sampling was used in the study. Twenty (20) male and twenty-nine (29) female respondents underwent the experiments conducted in a computer laboratory setting at a temperature between 22 °C and 24 °C. This temperature was based on research conducted by Sansone (2021), which investigated the effect of classroom temperature on students' performance. This temperature was found to significantly enhance students' academic performance test scores in the classroom. Moreover, a computer set station where the working memory assessments were performed by the respondents and Typing Master software was used to measure the encoding performance of the students in terms of accuracy and speed (words per minute). In addition, modified lag tasks and automated operation spans were used to measure the working memory capacity of the students.

RESULTS

Forty-nine (49) undergraduate BSIE students participated in the study. Among them were twenty (20) males and twenty-nine (29) females with ages ranging from 18 to 22 years, with a standard deviation of 2.23. In the high-WMC group, there were seven (7) males and eight (8) females (mean age=19.87, standard deviation=1.31). In low-WMC having an average age of 21.53 with a standard deviation of 2.65 were eight (8) males and seven (7) females. On average, there were fourteen (14) females and five (5) males with an average age of 21 years and a standard deviation of 2.18.

Table 1
Working Memory Capacity Profile of the students

Classification	Average WM Ratio	Mean Age (years old)	Standard deviation	No. of Male	No. of Female	Total no. of students
High-WMC	0.66	19.87	1.31	7	8	15
Average-WM	0.55	21.00	2.18	5	14	19
Low-WMC	0.39	21.53	2.65	8	7	15
Total	**0.54**	**20.82**	**2.23**	**20**	**29**	**49**

Table 1 shows the classification of students' working memory capacity. The table shows that most of the respondents with high WMC were female and had an average year of age of 19.8, while most of the respondents with low WMC were male and had an average year of age of 21.53.

Table 2
Implications of Individual Differences on Encoding Performance

	Silence	
	Speed (words per minute)	Accuracy (%)
High-WMC	26.07	85.87
Average-WMC	20.79	87.89
Low-WMC	25.13	87.67

As shown in Table 3, although there were differences in the means of each classification of working memory capacity given the value of adjusted mean square of error which was 83.80, the differences were not significant since the derived p-value was greater than the value of the confidence level at 0.05. This means that there were differences in the mean speed (words per minute) and accuracy (%) among low-WMC, average-WMC, and high-WMC students in encoding performance but the obtained result of the sample size does not represent the true difference of the entire population.

Table 3
Analysis of Variance in encoding performance as Influenced by the Working Memory Capacity in terms of speed

Source	DF	Seq SS	Adj SS	Adj MS	F-Value	P-Value
Factor	3	364.0	364.00	121.33	1.45	0.234
Error	94	7877.2	7877.20	83.80		
Total	97	8241.2				

In Table 4, although there was a difference in means of each classification of working memory capacity given the value adjusted mean square of error which was 109.11 and higher compared to the obtained value in terms of speed, the finding revealed that there were no differences on the encoding performance of the students as the p-value calculated was greater than the confidence level, 0.05.

Table 4
Analysis of Variance in Encoding Performance as Influenced by the Working Memory Capacity in Terms of Accuracy

Source	DF	Seq SS	Adj SS	Adj MS	F-Value	P-Value
Factor	2	39.10	39.10	19.55	0.18	0.837
Error	46	5018.90	5018.90	109.11		
Total	48	5058.00				

Table 5
Results of the Pearson Correlation Test on the Relationship Between Working Memory Capacity and Encoding Performance of the Students

	WMCS
Speed	0.033
	0.821
Accuracy	0.113
	0.440
Cell Contents	
P-Value	

It can be inferred from the results that there was no significant correlation between the working memory capacity and the encoding performance of the students. The individual differences in the students' WMC affected the quality of their encoding performance, as can be traced from the data presented in Table 4.

DISCUSSION

To investigate this relationship between working memory capacity (WMC) and encoding performance in undergraduate BSIE students formed the basis for this study; however, some interesting tendencies were found from these results but no significant correlation was obtained from statistical analysis. Table 1 contains demographic breakdowns that indicate a gender disparity among WMC groups. There are more females in the high-WMC group while in the low-WMC group, there are more males. This is important because some studies like those by (Unsworth & Spillers, 2010) have shown potential gender-related variations in WMC usage.

The results of the analysis of variance (ANOVA) both for speed and accuracy in encoding tasks are presented in Tables 2 and 3. Although there were average differences observed between WMC groups, p-values did not exceed 0.05 in any table. It means that these differences could be accidental and not representative of the population. On the other hand, Table 2 has peculiar descriptive statistics. The high-WMC group had a slightly faster mean speed than their low-WMC counterparts although it lacked statistical significance; which is consistent with authors such as (Schulze & Koelsch, 2012), who propose that increased WMC facilitates faster information processing during encoding. Finally, the finding confirms the lack of a significant correlation between WMC and encoding performance through the Pearson correlation test results. However, these findings showed a comparatively minor number of participants, and as such, they are merely experimental. This finding contradicts some existing research, such as (McNamara & Scott, 2001), which suggests a positive correlation between WMC and memory abilities. And so, more research having more samples between working memory capacity and encoding performance requires more investigation.

Conclusions

Based on their findings, the researchers concluded that students' differences in working memory capacity had an impact on their encoding performance; those with high WMC encoded information faster but with less accuracy. Students with low WMC exhibited slower encoding times but higher output accuracy. Furthermore, no significant differences were seen in the students' encoding ability when categorized as having a high, medium, or low working memory capacity. Furthermore, there was no discernible relationship between the students' encoding performance and their working memory capacity.

Recommendations

Considering the findings of the study, the researcher concludes that the administration of Visayas State University-Isabel needs to make provisions to enhance the encoding competencies of their students, despite differences in working memory capacity. The development of such skills is imperative if VSU-Isabel wants to improve its graduates' employability against the backdrop of a knowledge-driven society. In the context of the results of the study, the researcher recommends that the proposed

measures and faculty members handling computer subjects formulate strategies to continually monitor and upgrade the encoding abilities of all their students. Furthermore, topics that other researchers may consider in this study include the mediating effects of working memory capacity on students' academic performance and individual differences in working memory capacity and reading comprehension.

Compliance with Ethical Standards

This study had several ethical considerations. This includes:

Informed consent: Informed consent was obtained from the participants, explaining the purpose of the study, the nature of their involvement, and any potential risks or benefits.

Anonymity and confidentiality: Participants' identities were kept confidential and their names were not used in any reports or publications. In addition, all data were kept secure and confidential.

Respect for participants: The researcher treated the participants with respect and dignity and ensured that their rights were protected. This includes ensuring that participants are not coerced or pressured to participate in the study and that they are free to withdraw at any time.

By addressing these ethical considerations, the researcher can ensure that the study is conducted responsibly and respectfully and that the rights and well-being of participants are protected.

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THE INFLUENCE OF ONLINE LEARNING IN ENHANCING ENGLISH LANGUAGE LEARNING AMONG SECONDARY SCHOOL STUDENTS OF SULU NATIONAL HIGH SCHOOL

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ABSTRACT

The study is a descriptive research which deals with the influence of online learning in enhancing English language learning among secondary school students of Sulu National High School. It also deals with the demographic profiles of the respondents in terms of gender, age, and grade level, the extent of the influence of online learning in enhancing English language learning among secondary school students of Sulu National High School. It also deals with the significant difference in the extent of the influence of online learning in enhancing English language learning among secondary school students of Sulu National High School when data are grouped according to demographic profile in terms of gender, age, grade level, and parent's educational attainment. The study was conducted at Sulu National High School and the respondents of the study are the secondary high school students of Sulu National High School. Purposive sampling technique was used in selecting the respondents of the study. The research instrument is composed of two parts. Part I is about the demographic profile of the respondents which includes their gender, age, grade level, and parent's educational attainment Part II is composed of 20 statements on the influence of online learning in enhancing English language learning among secondary high school students of Sulu National High School. There are 5 levels to choose from which ranges from "strongly agree" to "strongly disagree". It was found that the secondary school students of Sulu National High School are in their early teens for their present grade level, almost equal number were taken from each grade level, and the parents are not very educated. The respondents agree on the extent of the influence of online learning in enhancing English language learning among them. There is no significant difference in the extent of the influence of online learning in enhancing English language learning among secondary school students of Sulu National High School in terms of demographic profile.

Keywords: *Online Learning, English Language Learning, SNHS, Descriptive Research.*

INTRODUCTION

The process of delivering instruction and educational materials using the internet is called online learning, sometimes referred to as distant learning or eLearning. Students can complete their coursework and earn degrees without having to visit campuses thanks to it. Self-paced learning programs, video conferencing, and web-based classes are just a few of the numerous shapes that online learning can take. Because of its ease and adaptability, students are using this type of training more and more.

Facebook and other social media sites should be used in teaching and learning activities as a platform for students' autonomous study, claims Kitchakarn (2016). They would be able to express their ideas, opinions, remarks, and sentiments while also finishing tasks and improving their writing and grammar skills. Wang, Cheng, Chen, Mercer, and Kirschner (2017) use concept mapping in the classroom as a tool for group collaboration and participation. Such concepts are derived from a variety of computer and web-based tools utilized in the online environment.

Hee-jung Jung conducted a study in 2015 titled "Fostering an English Teaching Environment: Factors Influencing English as a Foreign Language Teachers' Adoption of Mobile Learning". The importance of mobile technology in English language education has increased and been brought to light. Regrettably, research on the attitudes and actions of EFL instructors towards mobile technology has not given enough attention to descriptive features of it, leading to misconceptions about what it requires. Additionally, from the viewpoint of English language learners, a number of earlier research have looked at various facets of electronic learning (e-learning) and technological advancements in mobile learning (m-learning). Consequently, this study provided a research approach that uses Fred Davis's Technology Acceptance methodology (TAM) as the research framework to empirically evaluate the m-learning acceptance behaviors of EFL teachers. This research model includes the following external aspects that influence people's perceptions of the usefulness of TAM: instantaneous connectivity, compatibility, interaction, content enrichment, and computer self-efficacy. The data of 189 EFL teachers was subjected to structural equation modeling (SEM) analysis in order to determine the causal linkages between external variables and TAM variables. The outcomes offer proof that the tested theories are correct. Future research on mobile learning may need to veer in a new route due to the implications of the findings.

Shahid, C., Gurmani, M. T., Rehman, S. U, & Saif, L. (2023) “The Role of Technology in English Language Learning in Online Classes at Tertiary Level”. The investigation of the link is the study's main goal between the elements of the Technology Acceptance Model (TAM) and internet using programs to learn languages. Furthermore, the study has looked into the impact of gender and past technology use habits. To obtain data, this study employed a TAM and a quantitative technique to analyze user responses

to the language learning system survey. There are one hundred participants in the study. Students taking online courses in undergraduate English as a second language during the COVID-19 epidemic. The intents, attitudes, and behaviours of students and app usage were discovered to have a strong positive correlation in the study's findings. Furthermore, there is a favorable correlation among the following factors: behavior, perceived use, real use, and seen usability. Gender does not seem to be related to any TAM component, although experience has been demonstrated to positively correlate with TAM components. According to the study, kids can enjoy learning a second language more when technology is included in the classroom.

Min Yang, Pauline Mak, Rui Yuan (2021) “Feedback Experience of Online Learning During the COVID-19 Pandemic: Voices from Pre-service English Language Teachers”. Using the concept of help seeking as a guide, this study aims to explore an online feedback experience of a group of MATESOL students regarding their professional learning during the COVID-19 pandemic (Newman, 2008). Analysis of the participant's written reflections from the online courses and interviews with them showed that while online feedback created challenges like limited real-time and extensive feedback, it also offered learning opportunities like the ability to give and receive feedback in diverse groups within a safe environment. Although they occasionally exhibited nonadoptive help seeking, the participants developed adaptive help seeking methods in response to criticism. These strategies included remaining resilient, seeking out alternative methods of accepting criticism, setting up feedback-generating internal meetings with educational resources, and creating a forum for participation and input from close friends and family. In order to promote pre-service teachers' adaptive help-seeking methods in feedback situations as critical and self-regulated learners who may contribute to their professional growth, the study closes with practical recommendations to improve pre-service teachers' online feedback experience.

Research Questions

The research study provided answers to the following questions:

1. What is the socio-demographic profile of the respondents in Sulu National High School, MBHTE-Sulu in terms of;

    1.1 Gender;

    1.2 Age;

    1.3 Grade Level; and

    1.4 Parent’s Educational Attainment?

2. What is the extent of the influence of online learning in enhancing English language learning among secondary school students of Sulu National High School?

3. Is there a significant difference in the extent of influence of online learning in enhancing English language learning among secondary school students of Sulu National High School when data are group according to their demographic profile;

3.1 Gender;

3.2 Age;

3.3 Grade Level; and

3.4 Parent's Educational Attainment?

METHODOLOGY

Research design

In order to ascertain how online learning has affected secondary students' in Sulu National High School, this study used a descriptive-survey research approach. The aforementioned design outlined any potential repercussions of putting the remote learning program in place.

This style was utilized to create information on the subject. The goal of the research is to describe and quantify the impact of online learning on English language understanding. They made sense of their uncertainty in their field of study using this design.

Research Locale

This study focused on numerous secondary students in Sulu National High School. This was conducted at the said school during the year 2023-2024. It is one of the most populated school in the Province of Sulu.

Respondents of the Study

Participants in this study are Sulu National High School secondary students. The purpose of the survey is to find out what the respondents think about the influence of online learning on English language understanding. The aforementioned respondents are arranged according to their academic specialization.

Distribution of the target samples among secondary school students.

Patikul District, MBHTE-Sulu Sulu National High School		
Grade level	**Section**	**Frequency**
Grade 7	12	25
Grade 8	12	25
Grade 9	11	25
Grade 10	11	25
Total		**100**

Sampling Design

The purposive sampling procedure was used as the sampling technique. To collect data from the respondents, the researcher employed a sampling approach. This protocol is the suitable method to gather data from the participants. Subsequently, the survey questionnaire is distributed.

The researchers can quickly get the information they require for their respondents by using this sampling technique. All they do is give the survey questions to the chosen respondents.

Data Gathering Procedures

In the collection of the data, the following steps were employed:

1) Permission to conduct the survey was requested from the Dean of the Graduate Studies of the Sulu State College and then from the School Principal of Sulu National High School and then from the Senior High school Coordinator.

2) The researcher launched and administered the questionnaire herself, as well as retrieving it.

Research Instrument

A survey questionnaire was the instruments in this study in gathering the data on demographic profile and the extent of the Influence of online learning in enhancing English language learning among secondary school students of Sulu National High School.

The survey questionnaire was utilized to obtain the data on the influence of online learning in enhancing English language learning among secondary school students of Sulu National High School, MBHTE-Sulu during the Year 2023-2024. This questionnaire

was adapted and patterned from Choosri Banditvilai (2016) Enhancing Students' Language Skills through Blended Learning.

The research instruments employed in this study were divided into two components. First, part of the questionnaire focused on obtaining the demographic profile of the respondents which includes Gender, Age, Grade level and Parent's Educational Attainment. And, the second part focused on the collection of data on the extent of the Influence of online learning in enhancing English language learning among secondary school students of Sulu National High School.

Under the extent of the Influence of online learning in enhancing English language learning among secondary school students of Sulu National High School contained twenty (20) items and will be answered through 5-points likert scales such as 5=Strongly Agree, 4=Agree, 3=Undecided, 2=Disagree, 1=strongly disagree.

Statistical Treatment of Data

1. For the research problem number one (1), the frequency percentage was used to ascertain the respondents' age, gender, grade level, and parents' educational attainment as well as the socio-demographic profile of Sulu National High School students, MBHTE-Sulu.

2. For the research problem number two (2), the means and standard deviation was utilized to evaluate the influence of online learning in enhancing English language at Sulu National High School, MBHTE-Sulu.

3. For the research problem number (3), In order to find significant differences in the degree to which the influence of online learning approach in enhancing English language learning among Secondary school students at Sulu National High School, MBHTE-Sulu, research problem number three used the t-test for independent samples for Gender. When data were grouped according to age, Grade level, and Parents educational attainment, One-way Analysis of Variance (ANOVA) was employed to find significant differences.

RESULTS AND DISCUSSION

1. What is the socio - demographic profile of the secondary school students of Sulu National High School in terms of 1.1 gender, 1.2 ag, 1.3 grade level, and 1.4 parent's educational attainment?

Demographic Profile of the Respondents in terms of Gender

Table 1.1 shows the demographic profile of the respondents in terms of gender. Fifty-eight percent (45%) of the respondents are females and 42% are males. The result implies that the female respondents comprised the majority.

Table 1.1 Demographic Profile of the Respondents in terms of Gender

Gender	Frequency	Percentage
Male	42	42%
Female	58	58%
TOTAL	100	100%

1.2 Demographic Profile of the Respondents in terms of Age

Table 1.2 presents the demographic profile of the respondents in terms of age.

It showed that 50% of the respondents are between 11 – 15 years old and only 1% are 10 years old and below.

The result implies that half the respondents are in their early teens in terms of gender.

Table 1.2 Demographic Profile of the Respondents in terms of Age

Age	Frequency	Percentage
10 years old and below	1	1%
11 – 15 years old	50	50%
16 – 20 years old	47	47%
21 years old and above	2	2%
TOTAL	100	100%

1.3 Demographic Profile of the Respondents in terms of Grade Level

Table 1.3 presents the demographic profile of the respondents in terms of grade level. It showed that almost equal number of respondents belong to the different grade level.

The result implies that the researcher tried to balance the number of respondents from each grade level.

Table 1.3 Demographic Profile of the Respondents in terms of Grade Level

Grade Level	Frequency	Percentage
Grade 7	24	24%
Grade 8	25	25%
Grade 9	25	25%
Grade 10	26	26%
TOTAL	100	100%

1.4 Demographic Profile of the Respondents in terms of Parent's Educational Attainment

Table 1.4 presents the demographic profile of the respondents in terms of parent's educational attainment. It showed that 38% of the parents reached high school level in education while only 6% reached finished either masters or doctorate degree.

The result implies that only a few of the parents were highly educated.

Table 1.4 Demographic Profile of the Respondents in terms of Educational Attainment

Educational Attainment	Frequency	Percentage
No Formal Education	8	8%
Elementary Level	21	21%
High School Level	38	38%
College Level	27	27%
Masters/Doctorate Degree	6	6%
TOTAL	100	100 %

2. What is the extent of the influence of online learning in enhancing English language learning among secondary school students of Sulu National High School?

Table 2 presents the extent of the influence of online learning in enhancing English language learning among secondary school students of Sulu National High School.

It showed that the respondents indicated either agree or undecided on the Different statements on the extent of the influence of online learning in enhancing English language learning. Among those statements they indicated agree are; students who is addicted in e – learning can speak English fluently (mean = 4.360, SD = .560); the students' learning experience is enhanced by this e – learning program (mean = 4.380, SD = .599); this e – learning program develops students' speaking skills (mean = 4.430, SD = .624); and the teacher should use this program to supplement in – class teaching (mean = 4.270, SD = .446). The average mean of 3.889 means that the secondary school students of Sulu National High School agree on the influence of online learning in enhancing English language Learning.

The result simply implies that online learning a positive effect in enhancing English language learning among the secondary school students of Sulu National High School. In a study conducted by Alsulami (2016), the result unequivocally shows that online learning is beneficial for English language learners.

Table 2 Extent of the Influence of Online Learning in Enhancing English Language Learning among Secondary School Students of Sulu National High School

Influence of Online Learning	Mean	SD	Interpretation
1. The e-learning lessons help the students understand the subject matter.	4.190	.394	Agree
2. The lessons in the e – learning program are interesting.	4.040	.400	Agree
3. The teacher should use this program to supplement in – class teaching.	4.270	.446	Agree
4. This e – learning program motivates the students to study by themselves.	4.130	.338	Agree
5. The students' learning experience is enhanced by this e – learning program.	4.380	.599	Agree
6. This e – learning program develops students' language skills.	4.220	.543	Agree
7. This e – learning program develops students' listening skills.	4.220	.561	Agree
8. This e – learning program develops students' speaking skills.	4.430	.624	Agree
9. This e – learning program develops students' reading skills.	4.340	.623	Agree
10. This e – learning program develop students' writing skills.	4.250	.592	Agree
11. e – learning can enhance students motivation in learning English.	4.390	.601	Agree
12. Students who is addicted in e – learning can speak English fluently.	4.360	.560	Agree
13. I think I can improve my English speaking skills through online learning.	4.030	.437	Agree
14. I believe learning through online will increase the cost of learning.	3.677	.550	Agree
15. Learning through online will help me to utilize my time productively.	3.670	.684	Agree
16. e – learning cannot build teamwork and collaboration.	2.580	1.224	Undecided
17. e – learning develops students' confidence in learning English language.	3.920	1.032	Agree
18. The students' learning experience is distracted by this e – learning program.	2.610	1.421	Undecided
19. I believe e – learning will not provide any advantages for me.	2.510	1.059	Undecided
20. I think I can learn well through online learning program.	3.570	.607	Agree
AVERAGE	3.889		AGREE

LEGEND

SCALE	RANGE	INTERPRETATION
5	4.50 – 5.00	Strongly Agree
4	3.50 – 4.49	Agree
3	2.50 – 3.49	Undecided
2	1.50 – 2.49	Disagree
1	1.00 – 1.49	Strongly Disagree

Is there a significant difference in the extent of the influence of online learning in enhancing English language learning among secondary school students of Sulu National High School when data are grouped according to gender, age, grade level, and parent's educational attainment?

The t-test was used for gender since there are only two categories. The sig. value of 0.330 is greater than the p – value of .05, 2- tailed tests. It means that the null hypothesis is accepted.

There is no significant difference in the extent of the influence of online learning Sulu in enhancing English language learning among secondary school students of Sulu National High School when data are grouped according to their gender.

The result implies that regardless of gender, online learning has the same influence in enhancing English language learning among the secondary school students of Sulu National High School.

In a study by Gurmani, Rehman, and Saif (2023), the result showed that gender does not seem to be connected to Technology Acceptance Model (TAM) components.

Table 3.1 t – test for Significant Difference in the Extent of the Influence of Online Learning in Enhancing English Language Learning among Secondary School Students of Sulu National High School in terms of Gender

Variables		Mean	SD	Mean Difference	t	Sig.	Description
Influence of online learning in enhancing English language learning	Male	4.790	.580				
	Female	4.350	.720	0.440	24.580	.330	Not Significant

Significant at .05 level

In Table 3.2 Analysis of Variance (ANOVA) was used for age, grade level, and parent's educational attainment.

The sig. value of 0.133 for age is greater than the p - value of .05, the sig. value of 0.198 for grade level is greater than the p-value at .05, and the sig. value of 0.224 for parent's Educational attainment is also greater than the p - value of .05. It could only mean that the null hypothesis is accepted in terms of age, grade level, and parent's educational attainment.

There is no significant difference in the extent of the influence of online learning in enhancing English language learning among secondary school students of Sulu National High School District when data are grouped according to their age, grade level, and parent's educational attainment.

The result implies that the different demographic profiles of the secondary school students of Sulu National High School cannot predict the extent of the influence of online learning in enhancing English language learning.

The "community of inquiry" Model, developed by Anderson, Rourke, Garrison, and Archer (2001) for online learning environments, is predicated on the notion of three distinct "presences" (cognitive, social, and teaching).

Table 3.2 ANOVA for Significant Difference in the Extent of the Influence of Online Learning in Enhancing English Language Learning among Secondary School Students of Sulu National High School in terms of Age, Grade Level, and Parent's Educational Attainment

		Sum of Square	df	Mean Square	f	Sig.	Interpretation
AGE							
	Between Groups	1.644	3	.548	1.912	.133	Not Significant
	Within Groups	27.516	96	.287			
	Total		99				
Grade Level							
	Between Groups	.962	3	.321	2.071	.198	Not Significant
	Within Groups	14.878	96	.155			
	Total	15.840	99				
Parent's Educational Attainment							
	Between Groups	.884	4	.221	1.447	.224	Not Significant
	Within Groups	14.506	95	.153			
	Total	15.390	99				

Significant at .05 level

Conclusions

The following was concluded based on the findings of the study:

The secondary school students of Sulu National High School were mostly females, in their early teens, and with parents who are not very educated.

It only showed that online learning significantly enhanced English language learning among secondary school students of Sulu National High School.

The absence of difference in the extent of the influence of online learning in enhancing English language learning among secondary school students of Sulu National High School when data are grouped according to gender, age, grade level, and parent's educational attainment only proves that demographic profiles of the students cannot determine the exact influence of online learning in enhancing English language learning.

Recommendations

This study recommends the following:

1. Further study on the extent of influence of online learning in enhancing English language learning among students must conducted to really prove if it does influence them or not.
2. Future researchers on the same topic should add variables like availability, strength of internet signal and other variables not covered by this study.
3. Teachers should constantly remind learners to balance their online learning and outdoor activities to keep themselves healthy physically and mentally.
4. Teachers using online teaching should give their best in teaching the learners and constantly remind learners to balance between indoor and outdoor activities.
5. Parents should provide continuous support on their children's online learning activities.
6. School administration should try their best to provide online access to the learners by connecting to any available internet services available in their area.

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Compliance with Ethical Standards

The researcher hereby declare that the consent was obtained from the respondents. In addition, the researcher assure that the data obtained from the respondents are kept confidentially. The researchers also tried to provide a friendly and safe space for the participants so they could discuss candidly about their experiences.

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THE PSYCHOLOGICAL WELL-BEING OF COLLEGE STUDENTS ATTENDING LIMITED FACE-TO-FACE CLASSES

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ABSTRACT

The present study aimed to examine the psychological well-being of college students attending the limited face-to-face. This study utilized the quantitative research design. Participants of this study were 227 college students. Ryff 42-item Psychological Well-Being Scale was utilized to determine the psychological well-being of college students. According to the findings, as to the profile, male and female showed no significant percentage that they differ in psychological well-being. Regardless of sex, both had high well-being which means that both sexes reflected higher levels of overall satisfaction. As to the academic program, College of Arts and Sciences, College of Business and Accountancy, and College of Education, showed no significant percentage. This can be construed that high psychological well-being among college students were more likely to be possessed by everyone. The result of this study implies that college students of Kabankalan Catholic College have the way of having social skills, level of social responsibility, state, trait and emotional intelligence, empathy, and levels of self-concept and has high well-being and reflect higher levels of overall life satisfaction, meaning high hedonic well-being. The findings of this study suggest that students will continue to enhance their understanding of how they will positively deal with their psychological well- being and foster positive thinking.

Keywords: *academic program, limited face-to-face, pandemic, psychological well-being*

INTRODUCTION

Psychological well-being is the optimal psychological functioning and experience in life which is meant to be fully developed, individuated, matured, self-actualized and purposefully engaged in life (Ryff, 2023). It lays a solid foundation for future personality and is a crucial time in human development when life goals, values, directions, and purposes are established (Benoit & Gabola, 2021). Moreover, it consists of having positive emotions like happiness and contentment as well as the ability to develop one's potential, have some control over one's life, have a sense of purpose, and have satisfying relationships (Ruggeri et al., 2020).

Academic excellence and well-being are interconnected, encompassing social, mental, physical, and emotional well-being. It is crucial for enjoyment and life satisfaction (Mercea, 2021). The Council of Europe (2022) highlights the complexity of well-being, stating that enhancing students' wellbeing requires a culture of wellbeing across the school and active participation from all staff, which can be challenging to achieve.

The Philippines is addressing mental health issues, but lacks person-centered solutions (Malolos et al., 2021). The pandemic has increased the risk of developing mental health issues among college students, impacting academic success, social interactions, and future career opportunities (Chen & Lucock, 2022). In contrast, the pedagogical study of Gonzales et al. (2022) reiterates that there is a positive correlation between the perception of psychological well-being of participants and their academic motivation.

The above study findings and results of different authors gave us the impetus to conduct the study and to determine their psychological wellbeing and foster positive thinking. Additionally, according to the our general observations and our own experiences, the suspension of physical education classes, the disruption of daily routines, and the decline in peer social support could all have an adverse effect on the mental health of college students of Kabankalan Catholic College attending the limited face-to-face classes.

Research Questions

This study aimed to determine the psychological wellbeing of college students of Kabankalan Catholic College in the Academic Year 2022-2023. Specifically, it aimed to answer the following questions:

1. What is the demographic profile of college students when grouped according to:
    1.1 Sex, and
    1.2 Academic Program?

2. What is the level of psychological well-being of the participants as a whole and in each of the following;

2.1. Autonomy,
2.2. Environmental Mastery,
2.3. Personal Growth,
2.4. Positive Relations,
2.5. Purpose in Life, and
2.6. Self-Acceptance?

3. Is there a significant difference in the level of psychological well-being of the participants when grouped according;
3.1. Sex, and
3.2 Academic Program?

METHODOLOGY

This study used a quantitative research method, the process of gathering and interpreting data which is used to identify trends and averages, formulate hypotheses, examine causality, and extrapolate findings to larger populations (Bhandari, 2022). We used a descriptive research design which describes the population, circumstance, or phenomena which is intended to be correctly and methodically described through descriptive study (McCombes, 2022).

This study involved Kabankalan Catholic College students enrolled in the 2022-2023 academic year, focusing on various academic clusters. Participants were identified using systematic sampling and stratified random sampling techniques. Systematic sampling involves selecting sample members from a larger population using a fixed interval, while stratified random sampling divides a population into smaller subgroups. The study aimed to understand the impact of these methods on student outcomes. Hayes (2022) defines stratification as the division of individuals into groups based on shared traits or characteristics, such as education or income.

This study adopted the Ryff Scales of Psychological Wellbeing, an abbreviated 42-item that includes a combination of positively and negatively worded questions. It is the commonly used version of Psychological Wellbeing Scales comprises combination of positively and negatively forty-two (42) worded items. The PWB in its separate construct consists of six (6) different subscales: Autonomy, Environmental Mastery, Personal Growth, Positive Relations with Others, Purpose in Life, and Self-Acceptance subscale. The study utilized a shorter version of the PWB scale and modified six subscales, totaling 42 items, to create a more cohesive survey structure, focusing on Psychological Wellbeing as a key indicator (Celestine, 2021).

Participants were asked to rate their agreement with six subscales on Autonomy, Environmental Mastery, Personal Growth, Positive Relations, Purpose in Life, and Self-Acceptance, ranging from 1 to 7.

Since the instrument in the study used was adopted from the psychological well-

being scale of Ryff (1989), in the study of Villarosa & Ganotice (2018) it had the reliability result which was 0.82 that was conducted on Filipino Teachers, which means that the instrument was good, consistent, and measure what it is supposed to measure. In the same study, it had the internal consistencies of the subscales of PWB Scale were satisfactory: autonomy μ = .79, environmental mastery μ = .62, personal growth μ = .85, positive relation with others μ = .74, purpose in life μ = .78, and self-acceptance μ = .66. Other subscales used to establish the criterion related validity showed high internal consistencies: interpersonal facilitation μ = .90, job dedication μ = .90, and task performance μ =.87.

Prior to the administration of the survey, we first asked permission from our mentor in Research in Psychology 1 subject, to the Vice President of the Academic Affairs, Dean of the College of Education, Dean of the College of Arts and Sciences, and to the Dean of College of Business and Accountancy as a gesture of courtesy.

A survey was conducted on Kabankalan Catholic College students from various academic clusters using a systematic sampling technique. The questionnaire included consent forms, demographic profiles, and the Ryff 42-item Psychological Wellbeing Scale. The scale evaluates six factors contributing to wellbeing and happiness: autonomy, environmental mastery, personal growth, meaningful relationships, purpose, and self-acceptance. The responses were retrieved, tallied, tabulated, and interpreted.

The data that were gathered in the study were subjected to the following statistical treatments.

For problem 1, frequency distribution defined as an organized tabulation or graphical representation of the number of individuals in each category on a measurement scale were used. It used frequency distribution tables in this study because frequency distribution tables are the most common type of tabulation used to indicate the frequency distribution with the aim of comparing data that has a different number of subjects (Manikandan, 2019). It indicates the observations' high and low points as well as whether they are concentrated in one place or dispersed throughout the full scale. As a result, the frequency distribution shows how the various observations are spread along the measurement scale (Young, 2022).

For problem 2, we used the mean to determine the psychological well-being of the college students attending limited face-to-face classes. A set of two or more numbers is simply averaged mathematically to get the term "mean”. According to Hayes (2022), there are several ways to calculate the mean for a given collection of numbers, including as the arithmetic mean approach, which utilizes the sum of the series values, and the geometric mean method, which uses the average of a group of products. However, the majority of the time, the results from all of the main approaches to calculating a simple average are roughly the same. Moreover, the statistical mean provides crucial details about the current data set and, as a single number, can offer numerous insights on the experiment and the nature of the data (Zach, 2022).

For problem 3, to determine the significant difference in the level of psychological well- being of the participants when grouped according to sex, T-test for independent grouped was used. According to (Bevans, 2020), T-test is a test that is used to compare the means of two groups. It determines whether a process or treatment actually has an effect on the population of interest, or whether two groups are different from one another.

On the other hand, when grouped according to academic program, one-way analysis of variance was used. According to Mackenzie (2021), it is a hypothesis-based test, which means it will look at several mutually exclusive explanations about our data.

RESULTS AND DISCUSSION

Table 1
Demographic Profile of the Participants

Profile	Frequency	Percentage
Sex		
Male	112	49.3
Female	115	50.7
Academic Program		
College of Business and Accountancy	110	48.5
College of Education	99	43.6
College of Arts and Sciences	18	7.9
Total	227	100.0

Table 1 shows the demographic profile of college students which consists of 112 males (49.3) and 115 females (50.7). Moreover, the highest number of participants were College of Business and Accountancy with 110 (48.5) participants and the lowest number were from College of Arts and Sciences with only 18 (7.9) participants.

The table reveals that female students in Kabankalan Catholic College-College Department are more likely to participate in health-related research, while males are more willing to participate in minimal risk-related studies (Otufowora et al, 2021). Moreover, 921,324 number of students were enrolled in the Philippines in business related courses making it list of top college courses (Guanzon, 2022).

Table 2.1
Level of Psychological Well-Being of the Participants in terms of Autonomy

Indicators	Mean	SD	Verbal Interpretation
I am not afraid to voice my opinions, even when they are in opposition to the opinions of most People	5.33	1.25	Very High Well-Being
My decisions are not usually influenced by what everyone else is doing	5.11	1.38	High Well-Being
I tend to be influenced by people with strong opinions.	3.13	1.54	Low Well-Being
I have confidence in my opinions, even if they are contrary to the general consensus.	4.76	1.50	High Well-Being
It's difficult for me to voice my own opinions on controversial matters.	3.15	1.58	Low Well-Being
I tend to worry about what other people think of me.	3.20	1.74	Low Well-Being
I judge myself by what I think is important, not by the values of what others think is important.	5.10	1.39	High Well-Being
Overall	4.25	0.69	Average Well-Being

Table 2.1 shows the level of Psychological Well-Being of the participants in terms of Autonomy of college students as a whole and the result was average well-being (M= 4.25, SD= 0.69), with the item number 1 on autonomy subscale, "I am not afraid to voice my opinions, even when they are in opposition to the opinions of most people" had the very high well-being, which implies that first year students persevere and persist on their opinions. Gaskell (2021) states that psychological safety in speaking up could help in promoting innovations that go against the strategies that differ from one's line or status quo. However, item number 3 on autonomy subscale (M=3.13, SD=1.54), "I tend to be influenced by people with strong opinions" has the low well-being shows that there was a presence of dominance among the environment that the first-year college was in. It is an extremely powerful phenomenon because the strong influence can dominate individuals (Schneider, 2023).

Table 2.2
Level of Psychological Well-Being of the Participants in terms of Environmental Mastery

Indicators	Mean	SD	Verbal Interpretation
In general, I feel I am in charge of the situation in which I live.	5.65	1.10	Very High Well-Being
The demands of everyday life often get me down.	3.60	1.59	Average Well-Being
I do not fit very well with the people and the community around me.	3.97	1.51	Average Well-Being
I am quite good at managing the many responsibilities of my daily life.	5.30	1.44	Very High Well-Being
I often feel overwhelmed by my responsibilities.	2.98	1.43	Low Well-Being
I have difficulty arranging my life in a way that is satisfying to me.	3.39	1.93	Average Well-Being
I have been able to build a living environment and a lifestyle for myself that is much to my liking.	5.22	1.41	High Well-Being
Overall	4.30	0.62	Average Well-Being

Table 2.2 shows the level of Psychological Well-Being of the participants in terms of environmental mastery of college students as a whole and the result was average well-being (M= 4.30, SD=0.62), with the item number 1 on environmental mastery subscale (M=5.65,SD= 1.10) , “In general, I feel I am in charge of the situation in which I live.” had the very high well-being, which implies that college students of KCC are in control of their lives. Salazar and Meador (2022) stated that self-control as a mediator of learning and well-being could help for self-determination for students.

However, item number 5 on environmental mastery subscale (M=2.98, SD=1.43), “I often feel overwhelmed by my responsibilities” had the lowest mean and standard deviation which indicated that it had low well-being, it implies participants felt pressure in performing tasks. Moreover, oppose to the study of Ko, Shim, and Lee (2021), it states that there is willingness in college students to take tasks which is a good indicator to show the level of their social responsibility. Bronfenbrenner's Ecological Systems theory highlights the impact of environment on growth and development, emphasizing the importance of self-reliance in various environments throughout life (Evans, 2023).

Table 2.3
Level of Psychological Well-Being of the Participants in terms of Personal Growth

Indicators	Mean	SD	Verbal Interpretation
I am not interested in activities that will expand my horizons.	4.44	1.75	High Well-Being
I think it is important to have new experiences that challenge how you think about yourself and the world.	6.27	4.84	Extremely High Well-Being
When I think about it, I haven't really improved much as a person over the years."	3.83	1.75	Average Well-Being
I have the sense that I have developed a lot as a person over time.	5.22	1.47	High Well-Being
For me, life has been a continuous process of learning, changing, and growth.	6.63	0.90	Extremely High Well-Being
I gave up trying to make big improvements or changes in my life a long time ago.	4.03	1.95	Average Well-Being
I do not enjoy being in new situations that require me to change my old familiar ways of doing things.	4.08	1.64	Average Well-Being
Overall	4.93	0.99	High Well-Being

Table 2.3 shows the level of psychological well-being of the participants in terms of personal growth as a whole and the result was high well-being (M= 4.93, SD=0.99), with the item number 5 on personal growth subscale (M=6.63, SD= 0.90), "For me, life has been a continuous process of learning, changing, and growth" had the extremely high well-being, which revealed that participants were optimistic of how they view their life. This is supported by the study of Murphy (2023) which revealed that hope and optimism as distinct constructs influence academic performance as college students. On the other hand, Razzetti (2019) argued that optimism leads to poor outcomes, but it makes us underestimate risks or take less action.

Table 2.4
Level of Psychological Well-Being of the Participants in terms of Positive Relations

Indicators	Mean	SD	Verbal Interpretation
Most people see me as loving and affectionate.	5.57	1.43	Very High Well-Being
Maintaining close relationships has been difficult and frustrating for me.	3.72	1.75	Average Well-Being
I often feel lonely because I have few close friends with whom to share my concerns.	3.96	1.84	Average Well-Being
I enjoy personal and mutual conversations with family members and friends.	5.29	1.65	High Well-Being
People would describe me as a giving person, willing to share my time with others.	5.27	1.54	High Well-Being
I have not experienced many warm and trusting relationships with others.	4.22	1.74	Average Well-Being
I know that I can trust my friends, and they know they can trust me.	5.44	1.50	Very High Well-Being
Overall	4.78	0.76	High Well-Being

Table 2.4 shows the level of psychological wellbeing of the participants in terms of positive relations as a whole and the result was high well-being (M= 4.78, SD=0.76), with the item number 1 on positive relations subscale (M=5.57, SD = 1.43), “Most people see me as loving and affectionate” had the very high well-being, which implies that participants are nurturing and passionate as other viewed them. Zhang (2022) and Siciliano (2023) highlight that passion in college students is sociologically patterned, guiding them towards quality ideological education and common value pursuit.

Table 2.5
Level of Psychological Well-Being of the Participants in terms of Purpose in Life

Indicators	Mean	SD	Verbal Interpretation
People would describe me as a giving person, willing to share my time with others.	4.89	1.73	High Well-Being
I have a sense of direction and purpose in life.	5.32	1.60	Very High Well-Being
I don't have a good sense of what it is I'm trying to accomplish in life.	4.43	1.84	Average Well-Being
My daily activities often seem trivial and unimportant to me.	4.27	1.68	Average Well-Being
I enjoy making plans for the future and working to make them a reality.	5.64	1.42	Very High Well-Being
Some people wander aimlessly through life, but I am not one of them.	4.51	1.57	High Well-Being
I sometimes feel as if I've done all there is to do in life.	4.13	1.72	Average Well-Being
Overall	4.74	0.78	High Well-Being

Table 2.5 shows the level of psychological well-being of the participants in terms of purpose in life as a whole and the result was high well-being (M= 4.74, SD=0.78), with the item number 5 on purpose in life subscale (M=5.64,SD= 1.42) , "I enjoy making plans for the future and working to make them a reality" had the very high well-being, which indicates participants vision of themselves in the future. This implies that envisioning preferred future helps someone set goals, build your strengths dream, address development needs, and map the path to success. Brimhall (2021) and Cunningham (2019) suggest that clear vision and well-planned plans lead to better goals, financial stability, and mental health, while avoiding denying present pleasures can decrease happiness over time.

Table 2.6
Level of Psychological Well-Being of the Participants in terms of Self-Acceptance

Indicators	Mean	SD	Verbal Interpretation
When I look at the story of my life, I am pleased with how things have turned out.	5.39	1.34	Very High Well-Being
In general, I feel confident and positive about myself.	5.37	1.44	Very High Well-Being
I feel like many of the people I know have gotten more out of life than I have.	4.06	1.62	Average Well-Being
I like most parts of my personality.	5.47	1.59	Very High Well-Being
In many ways I feel disappointed about my achievements in life.	3.99	1.90	Average Well-Being
My attitude about myself is probably not as positive as most people feel about themselves.	3.40	1.56	Low Well-Being
When I compare myself to friends and acquaintances, it makes me feel good about who I am.	4.78	1.62	High Well-Being
Overall	4.64	0.70	High Well-Being

Table 2.6 is the level of psychological well-being of the participants in terms of self-acceptance subscale as a whole and the result was high well-being (M= 4.64, SD=0.70).

In the self-acceptance subscale, item number 4 had the very high well-being with the mean of 5.47 and standard deviation of 1.59 which shows that participants embrace themselves. Thakadipuram (2023) stated that accepting oneself also means learning to recognize the presence of negative and positive elements and embracing it with openness. Self-acceptance requires understanding one's position, being inclusive, putting goodwill first, embracing psychological flexibility, and starting in one's sphere of influence. However, low well-being among students due to institutional and bureaucratic barriers is a significant issue (Calvez & Cummings, 2022; Fotuhi et al., 2022).

Table 2.7
Level of Psychological Well-Being of the Participants as a whole

Indicators	Mean	SD	Verbal Interpretation
Autonomy	4.25	0.69	Average Well-Being
Environmental Mastery	4.30	0.62	Average Well-Being
Personal Growth	4.93	0.99	High Well-Being
Positive Relations	4.78	0.76	High Well-Being
Purpose in life	4.74	0.78	High Well-Being
Self-Acceptance	4.64	0.70	High Well-Being
Overall	4.61	0.46	High Well-Being

Table 2.7 shows the results of the level of psychological well-being of the participants as a whole with the overall result of (M=4.61, SD=0.46) which indicates high well-being and reflect higher levels of overall life satisfaction, meaning high hedonic well-being.

The study by Celestine (2021) found that participants exhibit autonomy and environmental mastery subscales, indicating self-determination, self-evaluation, competence in managing environment, controlling activities, effectively using opportunities, and choosing suitable contexts.

High well-being is characterized by positive attitudes towards self, understanding of human relationships, and a positive understanding of one's past, present, and future goals (Gao & McLellan, 2018).

Additionally, personal growth had the highest mean of 4.93 which signifies those participants believed in their own way of coping and striving for themselves. On contrary, autonomy had the lowest mean of 4. 25 which means that participants had only average well-being in terms of self-determination or being independent.

Table 3
Difference Analysis on the Level of Psychological Well-Being of the Participants when grouped according to their Demographic Profile

Profile	Statistics	Level of Psychological Well-Being
Sex	Mean t-test	Male=4.60; Female=4.62
	Coefficient	−0.306
	Probability Value	0.760
	Conclusion	Not Sig.

Academic Program	Mean F-test	CBA=4.58 COED=4.63 CAS=4.62
	Coefficient	0.310
	Probability Value	0.734
	Conclusion	Not Sig.

Not Sig. if p-value is greater than 0.05; sig. and highly sig. if p-value is less than 0.05 and 0.01, respectively.

Table 3 is the difference analysis on the level of psychological well-being of the participants when grouped according to their demographic profile. It reveals the profile of the participants in the locale of the study. Out of 227 participants, male has the mean of 4.60 and 4.62 for female. This means that, in the locale of the study regardless of the sex, psychological well-being between male and female are both high. Reported gender differences in mental health are shown between men and women. According to Matud, López-Curbelo, & Fortes (2019), maintaining gender norms is important for mental health and both sexes benefit from having a balanced self-concept.

Participants in various academic programs showed high psychological well-being, but varied in life satisfaction and coping strategies, indicating varying levels of overall life satisfaction.

Conclusions

The researchers conclude that male and female showed that there was no significant percentage that they differ in psychological well-being. Regardless of sex, both had high well-being which means that both sexes reflect higher levels of overall satisfaction. Also, we associated this result to the reason that differences in psychological well-being between women and men have not yielded conclusive results despite the consistently reported gender differences in mental health and respecting conventional gender norms is important for both men and women's mental health, and both sexes benefit more from having a self-concept that incorporates both masculine-instrumental and feminine- expressive traits.

As to the academic program, College of Arts and Sciences, College of Business and Accountancy, and College of Education, showed no significant percentage. This can be construed that high psychological well-being among college students were more likely to be possessed by everyone. Hence, it can be concluded that, in terms of psychological well-being dimensions, all academic program has the way of having social skills, level of social responsibility, emotional intelligence, state and trait anxiety, empathy, and levels of self-concept. However, this does not signify that these academic programs have the same way of reflecting to higher levels of overall life satisfaction. Each academic program has different way of coping and overcoming challenges in life.

In terms of the six (6) subscales of psychological well-being, all subscales

indicated high well-being and reflect higher levels of overall life satisfaction, meaning high hedonic well-being. When ranked, purpose in life has the highest mean which indicates that participants were interpreted that they have goals in life and a sense of directedness; feels there is meaning to present and past life; holds beliefs that give life purpose; has aims and objectives for living.

Recommendations

In accordance to the results of the study, its interpretations, implications, and conclusions, the following suggestions were made:

Department Heads. Department Heads must continue to provide learning opportunities to teachers such as seminars, workshops, and trainings about psychological well-being and what are the necessary measures to counterbalance psychological problems.

Teachers. They must gauge teaching strategies, styles and techniques which are responsive to learners' needs. They must also resourceful of knowing what proper remediation and intervention to take to address the issues and problems of students who has or experiencing low psychological well-being.

Counselors. They must continue to conduct series of homeroom guidance among students to correct the notion that guidance office is not a program of the school to police but to restore and transform students' behavior and concerns.

Students. They must be vocal and brave enough to share their concerns to the authorized people to help them recover and give them necessary steps to take.

Compliance with Ethical Standards

Informed Consent. We gave informed consent to the participants by reading the letter for brief understanding of our study. We acted for the benefit of the respondents and supported several moral rules to put autonomy to the values and decision and by seeking the consent of the participants. The researchers have an obligation to respect the rights, needs, values, and desires of the informants (Creswell, 2018).

Data Privacy Act. We used the Data Privacy Act of 2012 and the Republic Act No. 10173 of the Philippines that measures to ensure that privacy, confidentiality, and the anonymity of the participants and their views. Bhasin (2020) stated that the ethical considerations are set of ideals and principles that should be upheld when conducting human affairs. The ethical guidelines ensure that no one acts in a way that is detrimental to society or a specific person. It forbids nasty behavior by both individuals and groups in vicious conduct.

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THE UNHEARD VOICES: THE DECLINE OF YOUTH POLITICAL PARTICIPATION IN THE PHILIPPINES

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ABSTRACT

Political participation is a fundamental human right guaranteed to all citizens by the constitution; the right to vote is related to democracy and citizen empowerment. This research uses a quantitative and descriptive approach to investigate the decline in Filipino youth political participation. A survey was used and answered by 279 respondents selected at random and identified as youth students at Arellano University College of Arts and Sciences. The survey questionnaire solicited respondents' demographic information, electoral participation in the last election, and reasons for not voting. The findings revealed that a substantial proportion of the research respondents were youth single adults. Political, socioeconomic, institutional, and media variables are the most important influences on respondents' decisions to vote for candidates. However, reasons for not voting include personal, political, candidate competencies, electoral process, and health concerns. The research suggests that political engagement in the subject matter

investigated was influenced by the overall decisions of the electorate's decision to vote or not is influenced by various variables. It is also recommended that policymakers develop a comprehensive strategy. There should be policies in place to encourage more people to participate in politics and promote democracy.

Keywords: *political participation, Filipino youth, democracy*

INTRODUCTION

The history of the Philippines is shaped by a wide range of political movements and individuals, its struggles for independence, and the challenges posed by contemporary governance. Its dynamic political climate is also attributed to its broad and rich history of political participation.

Jose Rizal, a nationalist and revolutionary, played an important role in the Philippines' struggle for independence from Spanish colonial power and is regarded as one of the most significant figures in the country's political history. Jose Rizal's ideas and deeds inspired generations of Filipinos to stand up for independence and self-determination, paving the way for the establishment of the Philippine Republic in 1898. Rizal's beliefs on social justice, democracy, and the value of education are still relevant to Filipinos today, demonstrating how his contributions have had a long-term impact on the country's political development.

Today, political engagement in the Philippines is limited due to various restraints. Despite recent advancements, the Philippines continues to struggle with political violence, inequality, and corruption, which undermines the government. As observed by Youniss et al. (2002), there is an overall pattern of disengagement and apathy among people around the world, and the Philippines is no exception, as shown in the voter turnout in the 2022 national election at 80.38%. According to the data provided by Statista (n.d), this indicates that nearly 20% of registered voters did not vote in the 2022 national election. This pattern is also reflected in the data on national elections from 2001 to 2016. Indeed, it can be clearly said that political participation has steadily declined over time.

Political participation, as defined by Longley (2021), refers to citizens' political activity and involvement. Every citizen is valuable in politics, and politicians and scholars have justified democracy's distinct character by highlighting the role and importance of ordinary citizens in political activities. Activities such as voting, demonstrating, contacting public officials, boycotting, attending party rallies, participating in guerrilla gardening, publishing blogs, volunteering, joining flash mobs, signing petitions, purchasing fair-trade products, and even committing suicide have all been added to the list of nearly infinite participatory activities that influence politics and citizens' daily lives. (VanDeth, 2016).

Civil society emerged as an alternative to extra-parliamentary practices during the authoritarian Marcos dictatorship. Former President Cory Aquino's administration paved

the way for civil society political participation, highlighting the distinction between state-society ties in Philippine democracy prior to and following the period of Martial Law. The 1986 revolution prompted political and economic elites to recognize popular political power, resulting in a less limited ballot box. The communist left's defection to community organizations led to increased civil society political participation (Hutchinson, 2007).

In the Philippines, political participation research has primarily and generally focused on citizens' experiences with political involvement through organized groups, electoral behavior, including voting, and women's political participation. Women's interests in politics can be explicitly characterized by their efforts to organize as a political force at the local level and to run for a position that will recognize their qualities as public figures (Cunanan-Angsioco et al., 2000). Although the country boasts of a few established communities as well as civic and political groups, through which people notably participate, it is undisputed and unquestionable that a significant portion of its citizenry does not engage politically through such avenues, and that almost everyone will, at some point or another, as individual citizens of the community, they can participate and become politically involved.

However, while women's political participation remains on an average scale, political participation among youths is declining, which is deemed vital for a viable democratic society now and in the future. Youth contributions and participation in politics are critical for a society with informed citizens and strong public health. According to the Commission on Elections, there are 67 million voters in May 2022 elections, and 52% of all registered voters are between the ages of 18 and 40, categorized as youth or young adults (Inquirer, 2022). Most voters are expected to be youths, which indicates that the outcome of the elections could be significantly influenced by the voting results of this demographic. They are a numerical force to be reckoned with, yet the experiences and different interests of the youth lead to divergent sentiments during elections.

Furthermore, youths' passion for political involvement is usually undermined since they are barred from participating in electoral procedures and public affairs. When we talk about politics and youth in the Philippines, the first thing that comes to mind is the cliché that Filipino youths are uninterested, if not apathetic, in politics, which has remained unquestioned to this day. Some studies tend to confirm this viewpoint. According to a survey of Filipino youth, political participation is one of the least significant aspects of their lives, after having a decent marriage, family life, stable employment, and a solid education (Weiss, 2020).

This research aims to examine the decline of Filipino youth’s participation in politics during elections and identify the variables that lead to their refrain from this participation. Additionally, it seeks solutions to the problem and encourages increasing public involvement in the political process. Identifying the reasons for this decline can help policymakers develop measures that persuade more people to participate in politics and show support for democratic processes.

Research Questions

This research investigates the decline in youth political participation in the Philippines. Specifically, it sought answers to the following:

1. What are the reasons why there is a decline in youth political participation in the Philippines?
2. How does political participation influence the decision-making of the Filipino youth?
3. How can the government encourage more Filipino youth to participate in elections?

METHODOLOGY

Research Design

To analyze the provided topic, this research employed a quantitative-descriptive approach. Identifying respondents with a personal understanding of the Philippine electorate was the first stage in conducting this research. Secondly, respondents were randomly surveyed to address the problem stated. The third phase comprises reviewing survey results and other secondary sources to provide context and background information on the declining level of youth political participation in the electoral process. The data survey is analyzed using descriptive statistics.

Respondents of the Study

The respondents in the research are individuals who are eligible to vote in the Philippine elections; that is, they must be between the ages of 18 to 24, registered or unregistered voters in the Philippines, and informed about the electoral process. Finally, they have to agree to participate in the researchers' survey.

Sampling Technique

The researchers utilized a random sampling technique to determine the appropriate number of respondents for this research. Random sampling is a probability sampling strategy that involves selecting respondents at random from a subset of a population. In this sampling procedure, every member of the population has an equal probability of being chosen (Cresswell, 2005). There were 279 respondents, including 160 male and 119 female electorates. The respondents were registered and unregistered Philippine voters from Arellano University's College of Arts and Sciences. The survey research design is suitable for use because the research required information from students who agreed to be surveyed confidentially.

Scope and Limitation

The research examines the reasons for the decline in youth political participation in the Philippines. It identifies the factors that cause Filipino youth to refrain from participating in the electoral process. It also sought solutions to the problem and promote greater citizen participation in the political process, identifying the causes of this decline to assist policymakers in developing interventions that encourage more people to participate in politics and support democracy.

Furthermore, it is vital to recognize and evaluate the research's shortcomings. The scope of the research is confined to Arellano University undergraduate students, specifically from the College of Arts and Sciences. Hence, the findings cannot be extrapolated to all youths in the country. The research also fails to collect perspectives and opinions from other youths attending various colleges and universities throughout the country, who may have different experiences. Thus, it should be noted that the research's scope is limited since it does not include all possible elements that could impact the cause of the decline in youth political engagement in the country.

Data Gathering Method

The researchers sent a letter of permission to Arellano University-College of Arts and Sciences, stating their intent to conduct a survey. Upon obtaining approval, they began collecting data from the target respondents. The researchers provided a consent form to the respondents that explains the purpose of the survey and guarantees the anonymity of their participation.

Data Analysis

To complete this research, the data provided by the respondents were analyzed and evaluated to provide the hypothesis and responses to research questions. The survey data was electronically processed and summarized to offer descriptive results for analysis and interpretation based on the designated research variables.

RESULTS AND DISCUSSION

Table 1. Demographic Profile of the Respondents by gender, educational program, voter's status, and civil status

Variable	Indicator	Frequency	Percentage
Gender	Male	160	57.35

	Female	119	42.65
Educational Programs	Bachelor of Arts in Political Science	173	62.01
	Bachelor of Arts in History	26	9.32
	Bachelor of Arts in English	25	8.96
	Bachelor of Arts in Psychology	55	19.71
Voter's Status	Registered	237	84.95
	Unregistered	42	15.05
Civil Status	Single	250	89.61
	Married	29	10.39

Table 1 indicates the gender of the respondents, which is 57.35% male and 42.65% female. By educational programs chosen, 62.01% come from Bachelor of Arts in Political Science, 9.32% from Bachelor of Arts in History, 8.96% from Bachelor of Arts in English, and 19.71% from Bachelor of Arts in Psychology. By voter status, 84.95% are registered voters, while 15.05% are unregistered. Finally, in terms of civil status, 89.61% are single and 10.39% are married.

It may be drawn that the majority of the youths surveyed are registered voters in Philippine electorates, with most of them pursuing political science degrees. According to the data, most students studying political science are more informed and knowledgeable about the process of political participation than other youths enrolled in other programs.

Table 2. Factors That Influence Filipino Youth's Voting Decisions

Factor	Mean	Description
Political	7.17	Highly Dominant
Socio-Economic Factor	6.04	Dominant
Institutional	3.13	Moderately Dominant
Media	3.10	Moderately Dominant
Total Mean	**4.86**	**Highly Dominant**

Table 2 The political factors had the highest weighted mean of 7.17, showing a significant influence on youth voter decision-making during elections. Most likely, the majority of respondents strongly believe that political factors influenced their voting selections. Typically, awareness of political participation drives and dominates subsequent political decisions, events, and electoral processes. Increasing awareness as a strategy to increase youth political involvement could enormously impact democracy.

The socioeconomic factor emerged second in influence with a weighted mean of 6.04, indicating that it is the dominant factor in youth voters' decision-making when choosing candidates during the election. It established a boundary between the students surveyed and those who participated. It could possibly be argued that socioeconomic factors influence youth voter decision-making.

The institutional factor came in next with a weighted mean of 3.13, indicating a moderately dominant factor influencing youth voters' decision-making when choosing candidates during the election. The media also has a moderate dominance on youth voters' decision-making having 3.10 mean. Media advocacy promotes active participation in the election (Rahman & Bunaiya, 2022). According to Reyes (2019), this institution has significant influence in shaping the political and electoral scene today. Some media outlets, such as TV and radio, may portray elections as crucial for bringing about change in the country. In this circumstance, electoral participation will definitely increase.

The total weighted mean of 4.86 indicates that all four identified factors have a dominant influence on youth voter turnout. The results show that respondents' answers and ratings were consistent with the total mean.

Figure 1. Reason for not Voting in the Past Election

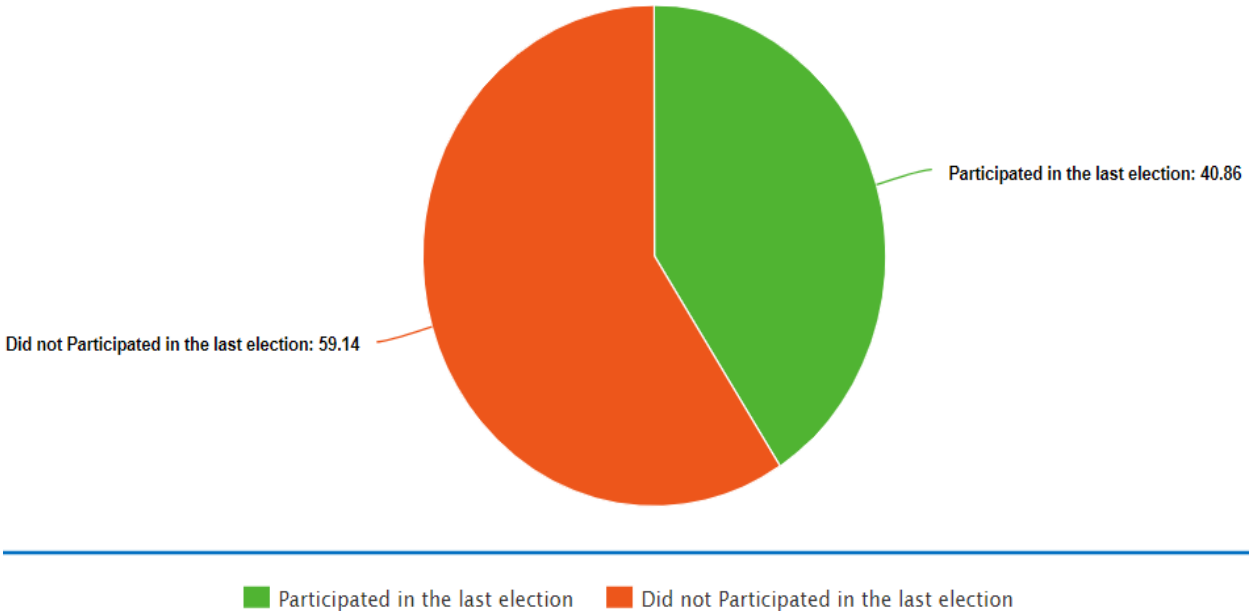


Figure 1 illustrates the respondents' political participation during the last election. Out of the 279 respondents, 114 (40.86%) participated in the last election. In comparison, 165 (59.14%) respondents did not participate in the last election, indicating a higher proportion of youth voters who did not vote compared to those who voted. The respondents cited five major reasons for not voting, including political, personal, health concerns, electoral processes, and candidate competencies.

Table 3. Reason for the Decline of Youth Political Participation

Reason	Frequency	Percentage
Political	75	45.45
Candidate Competencies	53	32.12
Personal	12	7.27
Electoral Process	18	10.91
Health	7	4.24
Total	**165**	**100**

As indicated in Table 3, more than half of the respondents did not vote in the previous 2022 election national election, owing mostly to political considerations, which were deemed the most significant factor impeding their electoral participation. Some respondents stated political reasons for prioritizing their viewpoints in participating in the election. Respondents agreed that prevalent political phenomena such as electoral fraud and vote buying, and many more were frequently responsible for the tarnishing of election outcomes' legitimacy. They saw this political practice as just abusive and out of control. Indeed, various abnormalities undermined the uncomplicated electoral processes in the Philippines (Abocejo, 2015).

Other reasons given included candidates' competencies, which accounted for 32.12%. They stated that several candidates must be qualified and capable to be elected. Candidates for elected posts require training, leadership experience, and certain skills needed for public service. The personal reason ranked third at 7.27%. Three respondents stated that voting and fulfilling their civic responsibilities were less essential than participating in their normal activities. Some people would rather do housework than vote. Meanwhile, electoral process came in fourth at 10.91%, with respondents citing poor electoral procedures during the election period. The least was 4.24% for health reasons, with some youth voters stating that they were not feeling well on election day and were unable to simply go to the voting station to participate in the democratic process.

Conclusions

The political participation is dependent on the truthfulness of the listed variables that determine how voters decide to engage in the political process. Indeed, political participation alters the landscape of democratic legitimacy; that is, when higher participation in elections is obtained, legitimate political objectives encourage voter participation. It is revealed that the respondents' participation in elections is heavily influenced by their overall decisions to vote or not vote in the election, which are shaped by compelling variables throughout the voting process. Individual voters' participation, whether voluntary or not, demonstrates a desire to decide and utilize their rights during an election.

Many voters did not vote due to political reasons, candidate competencies, and personal reasons. Filipino youth today value their perspectives in participating in the election and their desire for effective public leadership among elected officials. Meanwhile, personal concerns take place when an individual emphasizes personal interests over civic duty, business, work, family, and other responsibilities. The research found that reasonable and conscious voters prioritize their needs and wants. They choose candidates who are likely to meet those needs if elected to office.

Recommendations

The survey results show that policymakers should create a thorough and comprehensive approach. There should be measures in place to encourage more people to get involved in politics and support democracy. These are the recommendations based on the data gathered: 1) strengthening the awareness of the importance of political participation among youth; 2) reducing voter registration obstacles; 3) minimizing false and misleading information; 4) ensuring accessibility to polling precincts; 5) strengthening the campaign on the importance of political participation and democracy; 6) and finally, increased media influence in order to create a positive image and support for the government.

Compliance with Ethical Standards

Ethical guidelines were carried out throughout the study to maintain the integrity and quality of this research. Firstly, the researchers obtained permission from the Dean of the College of Arts and Sciences at Arellano University before they conducted the survey. Respondents were then oriented about the nature, purpose, and use of the collected data for the research. To safeguard their privacy, voluntary informed consent was secured from them through a signed agreement. They had the option to not participate in the survey if they did not want to.

Additionally, the respondents were guaranteed the confidentiality of the data shared and ensured that answered survey questionnaires would be handled and kept solely for academic purposes. Lastly, to generate impartial findings for this study,

objective and fair treatment of responses was highly observed throughout the data analysis process.

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THE USE OF AUDIOVISUAL MATERIALS IN THE TEACHING STRATEGIES AMONG TEACHERS OF JOLO III DISTRICT, MINISTRY OF BASIC HIGHER, AND TECHNICAL EDUCATION – SULU

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ABSTRACT

This study is quantitative-descriptive research determining the extent of the use of audiovisual materials in the teaching strategies among teachers of Jolo III District, Ministry of Basic, Higher and Technical Education – Sulu. Employing weighted mean, standard deviation, t-test for independent samples, one-way ANOVA, and Pearson's r test of correlation. The following are the findings of this study: 1) Out of 100 teacher-respondents, great majority are within 42 years old and above of age brackets, are female and most have 11-20 years length of service and with bachelor's degree. 2) Except for Subject delivery, all the Sub-categories subsumed under the extent of the use of audiovisual materials in the teaching strategies among teachers of Jolo III District in the context of pupil's engagement, pupil's output and pupil's behavioral attitude are all rated as "Agree" with total weighted mean score of 4.44, 4.36, 4.35 with standard deviation of .46608, .55403, and .53695 respectively by the teacher-respondents at Jolo III District. Additionally, sub-categories subsumed under the extent of the use of audiovisual materials in the teaching strategies among teachers of Jolo III District in the context of subject delivery is rated as "Strongly Agree" with total weighted mean score of 4.5443 with standard deviation of .46065 by the teacher-respondents at Jolo III District. 3) Generally, except for educational attainment, there is no significant difference in the extent of the use of audiovisual materials in the teaching strategies among teachers of Jolo III District when data are grouped according to their demographic profile in terms of gender, age, and length of service. Additionally, teacher-respondents differ in their perception towards the extent of the use of audiovisual materials in the teaching strategies among teachers of Jolo III District when data are grouped according to their demographic profile in terms of educational attainment. 4) Generally, the sub-categories subsumed the extent of the use of audiovisual materials in the teaching strategies among

teachers of Jolo III District is highly correlated which means there is but not strong interdependency among the subcategories subsumed.

Keywords: *Audiovisual materials, Teaching strategies,Subject Delivery, Pupils' Engagement, Pupils' Output, Pupils' Behavioral Attitudes.*

INTRODUCTION

As technology significantly changing the world, traditional teaching becomes lame and is undeniably ineffective. This is factual as even the learners of young ages are now equipped with technologies. The teachers in this modern world are then encouraged, if not mandated, to adapt to this technological evolution. The initiative of utilizing the technology in aiding the teaching process has been manifesting throughout the world.

Numerous global research studies demonstrate how teachers can improve the efficacy of the teaching and learning process by utilizing audiovisual tools. In reality, compared to traditional teaching methods, most students nowadays are more motivated to learn when audiovisual components are included. This was demonstrated in a study named "The Use of Audio-Visual Materials in Teaching and Learning Process in Effia Junior High Schools" conducted by Adwoa Kwegyiriba, Ronald Osei Mensah, and Elizabeth Ewusi (2022). They argue that although audio-visual resources are essential in Ghana's educational system, the results show that Effia's nine public JHSs lack proper instruction from their teachers on how to use these resources. Throughout their many educational experiences, the vast majority of students expressed a preference for audio-visual materials in their instruction, demonstrating their ongoing openness to learning using those resources. According to the report, educational stakeholders including the Ghana Education Service, the Ministry of Education, the Municipal Assembly, the Parent Teacher Association (P.T.A.), private funders, and non-governmental organizations should have access to audio-visual resources.

In the Philippines, the use of audiovisual materials is also prevalent throughout the country. Specifically in Laguna, according Coronado, Pascual & Orijala's (2021) a study. The free internet apps that connect them to the outside world are an additional addition to them. These methods of learning have even been introduced into the classroom, where they are widely regarded as an integral element of the environment for students in the twenty-first century. In order to provide lessons to children of all ages, audio-visual equipment has been essential from kindergarten through primary school.

The use of audio-visual materials is essential to Ghana's educational system; however, students in the nine public JHS in Effia are not receiving an adequate education from their teachers when they use these resources, as found by Osei et. al. (2022). Throughout their diverse classroom experiences, the majority of students indicated that they preferred to be taught using audio-visual materials, demonstrating their ongoing readiness to receive instruction using those tools. The study suggests that educational stakeholders, including the Ghana Education Service, the Ministry of Education, the

Municipal Assembly, the Parent Teacher Association (P.T.A.), private funders, and non-governmental organizations, should have access to audio-visual materials.

Song & Zhang (2018) audiovisual materials would provide a better learning environment , creating more opportunities for conversation, and help students construct their learning system more effectively. Thus, every school should provide audiovisual materials to enhance the teaching and learning process for the betterment of students' learning.

Today's students are familiar with contemporary technology. The free internet apps that connect them to the outside world are an additional addition to them. These methods of learning have even been introduced into the classroom, where they are widely regarded as an integral element of the environment for students in the twenty-first century. Audio-visual equipment has been an essential instrument for teaching lessons to children of all ages, from kindergarten to elementary school (Coronado, Pascual & Orijala, 2021).

In Sulu, the acknowledgment of the technologies by the young leaners are also rampant. This is questioning the effectiveness of traditional teaching by the perennial educators, thus the urge to engage technology in their classrooms. The researcher then yearns to study the effects of technology, specifically the audiovisual materials, to the teaching process among teachers of Jolo III District, Ministry of Basic Higher and Technical Education – Sulu.

Research Questions:

Specifically, this answered to the following questions:

1. What is the demographic profile of the teachers of Jolo III District, Ministry of Basic, Higher, and Technical Education – Sulu in terms of:
    - 1.1. Gender;
    - 1.2. Age;
    - 1.3. Length of Service; and
    - 1.4. Educational Attainment?
2. What is the extent of the use of audiovisual materials in the teaching strategies among teachers of Jolo III District, Ministry of Basic, Higher, and Technical Education – Sulu as to:
    - 2.1. Subject Delivery;
    - 2.2. Pupils' Engagement;
    - 2.3. Pupils' Output; and
    - 2.4. Pupils' Behavioral Attitudes?
3. Is there a significant difference on the use of audiovisual materials in the teaching strategies among teachers of Jolo III District, Ministry of Basic, Higher, and Technical Education – Sulu when they are grouped according to their:
    - 3.1. Gender;
    - 3.2. Age;
    - 3.3. Length of Service; and

3.4. Educational Attainment?

4. Is there a significant correlation among the variables subsumed under the extent of the use of audiovisual materials in the teaching strategies among teachers of Jolo III District, Ministry of Basic, Higher, and Technical Education – Sulu as to:
   4.1. Subject Delivery;
   4.2. Pupils' Engagement;
   4.3. Pupils' Output; and
   4.4. Pupils' Behavioral Attitudes?

METHODOLOGY

Research Design

A quantitative-descriptive research design was employed to ascertain the degree to which one hundred (100) teachers from the Ministry of Basic, Higher, and Technological Education – Sulu's Jolo III District used audiovisual materials as part of their teaching strategies in order to achieve the comprehensive research layout for the data collection in this study.

Research Locale

This research study was conducted at the seven (7) selected public elementary schools of Jolo III District, specifically; Lawm Alat Elementary School, Bakud Central Elementary School, Jati Elementary School, Asturias Elementary School, Tanjung Elementary School, Camp Asturias Elementary School, and Kasanyangan Elementary School.

Respondents of the Study

The target respondents of this study was the one hundred (100) selected teachers of Jolo III District, Division of Sulu from seven (7) different schools during the school year 2023-2024. They were either Male or Female, single or married, so long as they were teaching during the period of the study was conducted.

Table 1. Shows the list of the seven (7) target Public Schools of Jolo III District.

Jolo III District, Division of Sulu	Number of Respondents
Lawm Alat Elementary School	20
Bakud Elementary School	20
Jati Elementary School	20
Asturias Elementary School	10
Tanjung Elementary School	10
Camp Asturias Elementary School	10
Kasanyangan Elementary School	10
Total	100

Sampling Design

This study used a purposive sampling strategy. Units are chosen for inclusion in the sample using this non-probability sampling technique based on factors including geographic closeness, availability at a specific time, or willingness to participate in the study.

Data Gathering Procedure

To collect the data, the researcher employed the survey instrument after being validated. Permission to administer the said instrument is sought from the Dean of Graduate Studies of Sulu State College, the Sulu Division Office Superintendent, and the Supervisor of Jolo III District, as well as the Principal or Teacher-in-charge of the target seven (7) Schools from Jolo III District. Subsequently, the researcher launched and retrieved the said instrument personally.

Research Instrument

A survey questionnaire was used to gather data on the extent of The Use of Audiovisual Materials in the Teaching Strategies among Teachers of Jolo III District. This instrument was adapted with minor modification, took from standardized questionnaires of Bukidnon State University on The Practices of Public Elementary School Teachers on the 21st Century Skills: Basis for Intervention, also from research for CSS 12 students of DJPRSHS to discover the Effects/Impact of Modern Technology in Students' academic performance which is posted on scribd.com by Jhon Batuigas(2019). Additionally, a survey study by George, Adekunle Pius, and Ige Nelson Adewole (2022) on pre-service teachers' use of audio-visual resources in Lagos State Colleges of Education is published in the Academic Research Journal of Psychology and Counselling.

The instrument employed in this study was divided into two parts: Part I of the questionnaire asked questions about the respondents' age, gender, length of service, and Education Attainment. In Part II, the extent to which Jolo III District teachers used audiovisual materials in their lesson plans was assessed in terms of Subject delivery, Pupils' Engagement, Pupils' Output, and Pupils' Behavioral Attitudes.

Statistical Treatment of Data

Descriptive and inferential statistical tools was appropriately employed in the treatment of data to be gathered for this study, namely:

1. For research number one (1), the frequency and percentage were the statistical tools used to determine the profile of the teachers as to gender, age, length of service, educational attainment.

2. For research question number two (2), the weighted mean and standard deviation were used to determine the extent of the use of audiovisual materials in the teaching strategies among Teachers of Jolo III District, Ministry of Basic, Higher and Technical Education – Sulu enrolled during the school year 2023-2024.

3. For research question number three (3), t-test and one-way Analysis of Variance (ANOVA) were used. t-test for independent variable was employed to determine the significant differences of The Use of Audiovisual Materials in the Teaching Strategies among Teachers of Jolo III District Ministry of Basic, Higher, and Technical Education – Sulu when data are grouped according gender, However, when data are grouped based on age, length of service, and educational level, one-way Analysis of Variance (ANOVA) was used to identify the significant differences.

4. For question number four (4), The teachers of Jolo III District, Ministry of Basic, Higher, and Technical Education - Sulu, employed Pearson Product-Moment Correlation to ascertain the significant correlation between the sub-categories covered under the extent of using audiovisual materials in the teaching strategies with respect to subject delivery, pupil's engagement, pupils output, and pupil's behavioral attitudes.

RESULTS AND DISCUSSIONS

1. What is the demographic profile of the teachers of Jolo III District, Ministry of Basic Higher and Technical Education – Sulu in terms of: 1.1 Gender, 1.2 Age, 1.3 Length of Service; and 1.4 Educational Attainment?

1.1 In terms of Gender

Table 1.1 shows the demographic profile of teacher-respondents in terms of gender. This table indicates that, of the 100 teacher respondents, 9 (9.0%) are men and 91 (91.0%) are women. According to this study, there are more female than male among the overall number of teachers-respondent. This suggests that female make up the vast majority of the teacher-respondent from the Ministry of Basic Higher and Technical Education - Sulu's Jolo III District.

Table 1.1 Demographic profile in terms of gender.

Gender	Number of respondents	Percent
Male	9	9.0%
Female	91	91.0%
Total	**100**	**100%**

1.2 In terms of Age

Table 1.2 illustrates the age-related demographic profile of the teacher responders. The following table illustrates that, out of the 100 teacher responders, 7 (7.0%) are younger than 25, 29 (29.0%) are between 26 and 31 years old, 31 (31.0%) are between 32 and 41 years old, and 33 (33.0%) are retired. The results of this study show that about one-third of the instructor respondents are 42 years of age or older. This indicates even further that most of the teachers who participated in this survey are in the upper age group according to the study's definition.

Table 1.2 Demographic profile in terms in terms of age.

Age	Number of respondents	Percent
25 years old and below	7	7.0%
26-31 years old	29	29.0%
32-41 years old	31	31.0%
42 years old and above	33	33.0%
Total	**100**	**100%**

1.3 In terms of Length of service

Table 1.3 demonstrates the teacher respondents' demographic profile according to their years of service. The table revealed that, of the 100 teacher respondents, 28 (28.0%) had been in the field for less than five years, 27 (27.0%) for six to ten years, 29 (29.0%) for eleven to fifteen years, 15 (15.0%) for twenty-one to forty years, and 1 (1.0%) for forty years or more. Nearly one-third of the teacher responders in this study have been employed there for between eleven and twenty years. This implies that there are a significant number of mid-career professors in the Omar District.

Table 1.3 Demographic profile in terms of length of service.

Length of service	Number of respondents	Percent
5 years and below	28	28.0%
6 to 10 years	27	27.0%
11 to 20 years	29	29.0%
21-40 years	15	15.0%
41 years and above	1	1.0%
Total	**100**	**100%**

1.4 In terms of Educational Attainment

Table 1.4 demonstrates the educational attainment of the instructor respondents' demographic profile. Based on the data shown in this table, 86 (86.0%) of the 100 teacher respondents have a bachelor's degree, 12 (12.0%) have a bachelor's degree with master's units, 2 (2.0%) have a master's degree, and none have a doctorate. More than half of all teacher respondents, according to this study, only hold a bachelor's degree. This implies that the prevalence of bachelor's degrees among the teacher-respondents involved in this study suggest a need for an ongoing professional development and opportunities for career advancement among the elementary school teachers of Omar District.

Table 1.4 Demographic profile in terms of educational attainment.

Educational Attainment	Number of respondents	Percent
Bachelor's Degree	38	38.0%
Bachelor's degree with Master's units	34	34.0%
Master's degree	21	21.0%
Master's degree with Doctorate units	6	6.0%
Doctorate Degree	1	1.0%
Total	**100**	**100%**

2. What is the extent of the use of audiovisual materials in the teaching strategies among teachers of Jolo III District, Ministry of Basic Higher and Technical Education – Sulu as to: 2.1 Subject Delivery, 2.2 Pupils' Engagement, 2.3 Pupils' Output; and 2.4 Pupils' Behavioral Attitudes?

2.1 In the context of Subject Delivery

Table 2.1 shows the extent of the use of audiovisual in the context of Subject Delivery. With a weighted mean score of 4.54 overall and a standard deviation of.46065, this category was rated as "Strongly Agree". This result implies that the teachers who took part in the study strongly agreed about the degree to which instructional strategies involving audiovisual resources are applied within the framework of topic delivery. This implies that teachers see audiovisual materials as helpful instruments to encourage learning and student participation.

Notably, teacher-respondents rated the following items as "**Strongly Agree**": "Pupils understand the teacher when images or videos are shown", "Pupils follow the instructions easily when the teacher shows images or videos.", "I believe instructions were

clearly provided when Audiovisual Materials were used.", and "Use of Audiovisual materials help pupil's actual atmosphere of learning."

Table 2.1 Extent of the use of audiovisual in the context of Subject Delivery.

Statements		Mean	S.D	Rating
1	Pupils understand the teacher when images or videos are shown.	4.77	.446	Strongly Agree
2	Pupils follow the instructions easily when the teacher shows images or videos.	4.59	.570	Strongly Agree
3	I believe instructions were clearly provided when Audiovisual Materials were used.	4.50	.628	Strongly Agree
4	Use of Audiovisual materials help pupil's actual atmosphere of learning.	4.57	.590	Strongly Agree
5	Use of Audiovisual materials provide realistic experience for learners.	4.47	.611	Agree
6	Brainstorm and seek out knowledge for pupils to improve their ideas on the particular subject.	4.44	.671	Agree
7	Bring together relevant information and perspectives for pupils.	4.47	.643	Agree
Total Weighted Mean		4.54	.46065	Strongly Agree

Legend: (5) 4.50-5.00=Strongly Agree; (4) 3.50-4.49=Agree; (3) 2.50- 3.49=Undecided; (2) 1.50- 2.49=Disagree; (1) 1.00- 1.49=Strongly Disagree

2.2 In the context of Pupils' Engagement

Table 2.2 shows the extent of the use of audiovisual materials in the context of Pupils' Engagement. This category obtained a total weighted mean score of **4.44** with standard deviation of **.46608** which is rated as "Agree". This result indicates that the teachers involved in this study affirmed that generally agree with the extent of the use of audiovisual materials in teaching strategies within the context of Pupils' Engagement. This implies that Teachers recognize the value of audiovisual materials in capturing students' interest and fostering active participation, leading to a more engaging classroom environment.

Notably, teacher-respondents rated the following items, among others as "**Agree**": "I found the audiovisual materials more engaging.", "Audiovisual materials helped pupils to collaborate and cooperate with group activities.", "Pupils participate actively in discusssions.", "Participate in accessing information in an effective manner which is related to the pupils' learning." and, "Motivates students to get more involved in learning activities."

Table 2.2 Extent of the use of audiovisual in the context of Pupils' Engagement.

	Statements	Mean	S. D	Rating
1	Pupils are enjoy when I use Audiovisual Materials.	4.68	.469	Strongly Agree
2	I found the audiovisual materials more engaging.	4.39	.680	Agree
3	Audiovisual materials helped pupils to collaborate and cooperate with group activities.	4.43	.590	Agree
4	Pupils participate actively in discusssions.	4.38	.582	Agree
5	Create collaborative group activities to encourage participation.	4.42	.572	Agree
6	Participate in accessing information in an effective manner which is related to the pupils' learning.	4.34	.639	Agree
7	Motivates students to get more involved in learning activities.	4.47	.594	Agree
	Total Weighted Mean	**4.44**	**.46608**	**Agree**

2.3 In the context of Pupils' Output

Table 2.3 shows the extent of the use of audiovisual materials in the context of Pupils' Output. This category obtained a total weighted mean score of 4.36 with standard deviation of .55403 which is rated as "Agree". This result indicates that the teachers involved in this study affirmed that they generally agree with the extent of the use of audiovisual materials in teaching strategies within the context of Pupils' Output. Furthermore, this implies that Teachers recognize the value of audiovisual materials in stimulating students' creativity, facilitating active participation, and promoting meaningful learning experiences that contribute to higher-quality output.

Notably, teacher-respondents rated the following items, among others as "**Agree**": "I believe audiovisual materials are a good way to assess students' understanding of a topic.", "The Pupils answer more accurately the question when Audiovisual materials are used.", "When Audiovisual materials are used, the pupils can express their idea and creativity more effectively.", "Pupils do the tasks better (e.g. seatwork, short quiz, and assignment) when the teachers show images and videos." and, "Audiovisual materials increase academic achievement more than traditional method."

Table 2.3 Extent of the use of audiovisual in the context of Pupils' Output.

Statements		Mean	S. D	Rating
1	Audiovisual materials helped the pupils to exercise their creativity.	4.54	.558	Strongly Agree
2	I believe audiovisual materials are a good way to assess students' understanding of a topic.	4.36	.704	Agree
3	The Pupils answer more accurately the question when Audiovisual materials are used.	4.26	.691	Agree
4	When Audiovisual materials are used, the pupils can express their idea and creativity more effectively.	4.31	.662	Agree
5	Audiovisual materials enhance pupils' communication skills.	4.34	.699	Agree
6	Pupils do the tasks better (e.g. seatwork, short quiz, and assignment) when the teachers show images and videos.	4.38	.722	Agree
7	Audiovisual materials increase academic achievement more than traditional method.	4.32	.723	Agree
Total Weighted Mean		4.36	.55403	Agree

2.4 In the context of Pupils' Behavioral Attitudes

Table 2.4 shows the extent of the use of audiovisual materials in the context of Pupils' Behavioral Attitudes. This category obtained a total weighted mean score of 4.35 with standard deviation of .53695 which is rated as "Agree". This result indicates that that teachers in Jolo III District, Ministry of Basic, Higher, and Technical Education – Sulu generally agree with the extent of the use of audiovisual materials in teaching strategies within the context of Pupils' Behavioral Attitudes. Furthermore, this implies that Teachers perceive audiovisual materials as effective tools for promoting positive attitudes and behaviors among students, such as attentiveness, enthusiasm for learning, and active participation in classroom activities.

Notably, teacher-respondents rated the following items, among others as "**Agree**": "Pupils ask questions to get more information when audivisual materials are used.", "Raises his/her hand to answer a question or volunteer information when audiovisual materials are used.", "Use of Audivisual helps Pupils pronounce accurately the word.", "Use of audiovisual materials help pupils enhance retention memory." and, "The use of audiovisual aids make the students to remember the concept for longer period of time."

Table 2.4 Extent of the use of audiovisual in the context of Pupils' Behavioral Attitudes

	Statements	Mean	S. D	Rating
1	Pupils ask questions to get more information when audivisual materials are used.	4.29	.671	Agree
2	Raises his/her hand to answer a question or volunteer information when audiovisual materials are used.	4.29	.743	Agree
3	Pupils pay attention in class.	4.50	.659	Strongly Agree
4	Use of Audivisual helps Pupils pronounce accurately the word.	4.27	.664	Agree
5	Use of audiovisual materials help pupils enhance retention memory.	4.39	.665	Agree
6	The use of Audivisual materials support activities that facilitate higher-order thinking (e.g. collaborative activities, that require analysis of information)	4.38	.599	Agree
7	The use of audiovisual aids make the students to remember the concept for longer period of time.	4.32	.680	Agree
	Total Weighted Mean	**4.35**	**.53695**	**Agree**

3. Is there a significant difference on the use of audiovisual materials in the teaching strategies among teachers of Jolo III District, Ministry of Basic Higher and Technical Education – Sulu when they are grouped according to their: 3.1 Gender, 3.2 Age, 3.3 Length of Service; and 3.4 Educational Attainment?

3.1 According to Gender

Table 3.1 presents the difference the extent of the use of audiovisual materials when data are grouped according to their demographic profile in terms of gender. All of the t-values and probability values are not significant at alpha 0.05, as this table illustrates. This indicates that the perceptions of the male and female teacher respondents in this study regarding the subcategories covered by the degree to which teachers in the Jolo III use audiovisual materials in their teaching strategies do not differ. This suggests further that, as a male teacher-respondent, he may be more perceptive of the amount to which instructors in the Jolo III District, Ministry of Basic, Higher, and Technical Education - Sulu, use audiovisual resources in their lesson plans, or vice versa.

Hence, it is safe to say that variable gender has no significant intervention in the ways how teacher-respondents at Jolo III District perceive the extent of the use of audiovisual materials in the teaching strategies among teachers of Jolo III District. Therefore, the hypothesis which states that: “There is no significant difference in the extent of the use of audiovisual materials in the teaching strategies among teachers of Jolo III District, Ministry of Basic, Higher, and Technical Education – Sulu, when data are classified according to their demographic profile in terms of gender” is accepted.

Table 3.1 Difference in the extent of the use of audiovisual in terms of gender.

Variables	Grouping	Mean	S.D	Mean Difference	t	Sig.	Description
Subject Delivery	Male	4.5238	.37796	-.02250	-.139	.890	Not Significant
	Female	4.5463	.46976				
Pupils' Engagement	Male	4.5238	.44607	.08739	.16345	.594	*Not Significant*
	Female	4.4364	.46965				
Pupils' Output	Male	4.2063	.72882	-.16728	.19384	.390	Not Significant
	Female	4.3736	.53654				
Pupils' Behavioral Attitudes	Male	4.3492	.44671	.00070	.18858	.997	Not Significant
	Female	4.3485	.54719				

* Significant at alpha 0.05

3.2 According to Age

Table 3.2 presents the difference in the extent of the use of audiovisual materials when data are grouped according to their demographic profile in terms of age. This table indicates that all of the F-values and probability values of the subcategories that are included are not significant at alpha 0.05, with the exception of the student's output. This indicates that, despite age differences among the teacher respondents, there is generally no difference in the way that teachers in Jolo III District, Ministry of Basic Higher and Technical Education - Sulu, perceive the subcategories that fall under the umbrella of the extent to which audiovisual materials are used in their teaching strategies. This further suggests that, in comparison to teacher respondents between the ages of 25 and 42, teachers in the Jolo III District of the Ministry of Basic Higher and Technical Education - Sulu may not have a better perception of the extent to which these materials are used in their teaching strategies.

Hence, it is safe to say that variable age has no significant intervention in the ways how teacher-respondents at Jolo III District perceive the extent of the use of audiovisual materials in the teaching strategies among teachers of Jolo III District. Therefore, the hypothesis which states that: “There is no significant difference in the extent of the use of audiovisual materials in the teaching strategies among teachers of Jolo III District, Ministry of Basic Higher and Technical Education – Sulu, when data are classified according to their demographic profile in terms of age” is accepted.

Table 3.2 Difference in the extent of the use of audiovisual in terms of age.

Sources of Variation		Sum of squares	df	Mean Square	F	Sig.	Description
Subject Delivery	Between Groups	.855	3	.285	1.358	.260	Not Significant
	Within Groups	20.153	96	.210			
	Total	21.008	99				
Pupils' Engagement	Between Groups	1.507	3	.502	2.411	.072	Not Significant
	Within Groups	19.999	96	.208			
	Total	21.506	99				
Pupils’ Output	Between Groups	2.797	3	.932	3.245	.025	Significant
	Within Groups	27.590	96	.287			
	Total	30.388	99				
Pupils’ Behavioral Attitudes	Between Groups	1.446	3	.482	1.708	.170	Not Significant
	Within Groups	27.097	96	.282			
	Total	28.544	99				

3.3 According to Length of service

Table 3.3 presents the difference the extent of the use of audiovisual materials when data are grouped according to their demographic profile in terms of length of service. This table indicates that, at alpha 0.05, none of the F-values or probability values for the subcategories that are included are significant. This indicates that even though the teacher respondents in this study have varying lengths of service, they generally have similar perceptions about how much the teachers of Jolo III District, Ministry of Basic Higher and Technical Education – Sulu, use audiovisual materials in their lesson plans. It suggests that compared to those who have only had five years or less, teacher-respondents who have been employed for 41 years or more may not be better able to gauge the level of parental involvement in public school programs and activities at Omar District, Ministry of Basic, Higher and Technical Education – Sulu.

Hence, it is safe to say that the length of service variable has no significant intervention in the ways how teacher-respondents perceive the extent of the use of audiovisual materials in the teaching strategies among teachers of Jolo III District, Ministry of Basic Higher and Technical Education – Sulu. Therefore, the hypothesis which states that: “There is no significant difference in the extent of the use of audiovisual materials in the teaching strategies among teachers of Jolo III District, Ministry of Basic Higher and Technical Education – Sulu, when data are classified according to their demographic profile in terms of length of service” is accepted.

Table 3.3 Difference in the extent of the use of audiovisual in terms of length of service.

Sources of Variation		Sum of squares	df	Mean Square	F	Sig.	Description
Subject Delivery	Between Groups	.767	4	.192	.900	.467	Not Significant
	Within Groups	20.241	95	.213			
	Total	21.008	99				
Pupils' Engagement	Between Groups	1.026	4	.257	1.190	.320	Not Significant
	Within Groups	20.480	95	.216			
	Total	21.506	99				
Pupils’ Output	Between Groups	1.507	4	.377	1.239	.300	Not Significant
	Within Groups	28.881	95	.304			
	Total	30.388	99				
Pupils’ Behavioral Attitudes	Between Groups	1.373	4	.343	1.200	.316	Not Significant
	Within Groups	27.170	95	.286			
	Total	28.544	99				

* Significant at alpha 0.05

3.4 According to Educational Attainment

Table 3.4 presents the difference the extent of the use of audiovisual materials when data are grouped according to their demographic profile in terms of educational attainment. This table shows that all of the F-values and probability values of the subcategories covered by the degree to which teachers of the Jolo III District use audiovisual materials in their teaching strategies, are significant at alpha 0.05, with the exception of subject delivery and student engagement. This indicates that while the educational backgrounds of the teacher-respondents in this study vary, they generally have different opinions about how much parental involvement there should be in public school activities and programs at Omar District, Ministry of Basic, Higher and Technical Education – Sulu. It suggests that master's degree-holding teacher responders would

have a superior understanding of the level of parental involvement in public school programs and activities, at Omar District, Ministry of Basic, Higher and Technical Education – Sulu compared to those who only have bachelor's degree, and vice versa.

Hence, it is safe to say that the educational attainment variable has indeed significant intervention in the ways how teacher-respondents perceive the extent of the use of audiovisual materials in the teaching strategies among teachers of Jolo III District, Ministry of Basic Higher and Technical Education – Sulu. Therefore, the hypothesis which states that: "There is no significant difference in the extent of the use of audiovisual materials in the teaching strategies among teachers of Jolo III District, Ministry of Basic Higher and Technical Education – Sulu, when data are classified according to their demographic profile in terms of educational attainment" is rejected.

Table 3.4 Difference in the extent of the use of audiovisual in terms of Educational Attainment.

Sources of Variation		Sum of squares	df	Mean Square	F	Sig.	Description
Subject Delivery	Between Groups	1.973	4	.546	2.686	.051	Not Significant
	Within Groups	19.035	95	.200			
	Total	21.008	99				
Pupils' Engagement	Between Groups	2.185	4	.546	2.686	.051	Not Significant
	Within Groups	19.321	95	.203			
	Total	21.506	99				
Pupils' Output	Between Groups	3.648	4	.912	3.240	.015	Significant
	Within Groups	26.740	95	.281			
	Total	30.388	99				
Pupils' Behavioral Attitudes	Between Groups	3.746	4	.937	3.588	.009	Significant
	Within Groups	24.798	95	.261			
	Total	28.544	99				

The extent to which teachers in the Jolo III District of the Ministry of Basic Higher and Technical Education - Sulu use audiovisual materials in their teaching strategies varies among the groups classified according to Educational Attainment was determined by a Post Hoc Analysis using the Tukey test. This analysis was done after the data were grouped according to the demographic profile of the students who responded in terms of Educational Attainment.

On Pupils' Output: It shows that teacher-respondents who have Master with doctoral units obtained the mean difference of **1.04762*** with Standard Error of .37515 and p-value of .049 which is significant at alpha 0.05 over teacher-respondents who have Doctorate degree in their educational attainment. This indicates a significant difference in perception between teacher-respondents who have completed master's degrees with doctoral units and those who have obtained Doctorate degrees towards the extent of extent of the use of audiovisual materials in the teaching strategies among teachers of Jolo III District, Ministry of Basic Higher and Technical Education – Sulu. It implies that teacher-respondents with master's degrees and doctoral units perceive better towards the extent of the use of audiovisual materials in the teaching strategies among teachers of Jolo III District, Ministry of Basic Higher and Technical Education – Sulu compared to those with Doctorate degrees. This could imply that additional coursework or training beyond the master's level may have practical implications for teaching effectiveness in certain contexts.

On Pupils' Pupils' Behavioral Attitudes: It shows that teacher-respondents who have Master with doctoral units obtained the mean difference of **.66792*** with Standard Error of .22444 and p-value of .030 which is significant at alpha 0.05 over teacher-respondents who have bachelor's degree in their educational attainment. This indicates a significant difference in perception between teacher-respondents who have completed master's degrees with doctoral units and those who have obtained Doctorate degrees towards the extent of extent of the use of audiovisual materials in the teaching strategies among teachers of Jolo III District, Ministry of Basic Higher and Technical Education – Sulu. It implies that teacher-respondents with master's degrees and doctoral units perceive better towards the extent of the use of audiovisual materials in the teaching strategies among teachers of Jolo III District compared to those with bachelor's degrees. This could imply that advanced education and training have practical implications for creating a positive and supportive classroom environment conducive to fostering desirable behavioral attitudes among students.

Table 3.3.1 Post Hoc Analysis: Differences in the extent of the use of audiovisual in terms of Educational Attainment.

Dependent Variable	(I) Grouping by Educational Attainment	(J) Grouping Educational Attainment	Mean Difference (I-J)	Std. Error	Sig.
Pupils' Output:	Master with doctoral units	Bachelor's degree	.62406	.23306	.065
		Bachelor's degree with Master units	.36364	.23546	.537
		Master full pledged	.55000	.24695	.179

			1.04762*	.37515	.049
	Master with doctoral units	Doctorate degree	**.66792***	.22444	.030
Pupils' Behavioral Attitudes		Bachelor's degree	.35714	.22675	.517
		Bachelor's degree with Master units	.43333	.23782	.367
		Master full pledged	.88095	.36127	.114
		Doctorate degree			

* The mean difference is significant at the 0.05 level.

4. Is there a significant correlation among the variables subsumed under the extent of the use of audiovisual materials in the teaching strategies among teachers of Jolo III District, Ministry of Basic Higher and Technical Education – Sulu?

Table 4 shows the correlation among the subcategories subsumed under the extent of the use of audiovisual materials in the teaching strategies among teachers of Jolo III District, Ministry of Basic Higher and Technical Education – Sulu. As shown in the table, the computed Pearson correlation Coefficients (Pearson *r*) between these variables are significant at alpha 0.05.

Furthermore, the correlational degree among the extent of the use of audiovisual materials in the teaching strategies among teachers of Jolo III District, Ministry of Basic Higher and Technical Education – Sulu is as follows:

1) Very High positive degree of correlation among the subcategories subsumed under the extent of the use of audiovisual materials in the teaching strategies among teachers of Jolo III District.

Strong correlation among all subcategories implies that the use of audiovisual materials is consistently and uniformly perceived by the teacher-respondents involved in this study as beneficial across various aspects of teaching strategies. This implies that incorporating audiovisual resources can enhance multiple facets of teaching, including subject delivery, pupil engagement, pupils' output, and behavioral attitudes.

Hence, it is safe to say that generally the subcategories subsumed under the extent of the use of audiovisual materials in the teaching strategies among teachers of Jolo III District, Ministry of Basic Higher and Technical Education – Sulu are highly correlated. Therefore, the hypothesis which states that "There is no significant correlation among the sub-categories subsumed under the extent of the use of audiovisual materials

in the teaching strategies among teachers of Jolo III District, Ministry of Basic Higher and Technical Education – Sulu" is rejected.

Table 4 shows the correlation among the subcategories subsumed under the extent of the use of audiovisual materials in the teaching strategies among teachers of Jolo III District, Ministry of Basic Higher and Technical Education – Sulu.

Variables		Pearson *r*	Sig.	N	Description
Dependent	**Independent**				
Subject Delivery	**Pupils' Engagement**	.785**	.000	100	Very High
	Pupils' Output	.735**	.000	100	Very High
	Pupils' Behavioral Attitudes	.743**	.000	100	Very High
Pupils' Engagement	**Pupils' Output**	.753**	.000	100	Very High
	Pupils' Behavioral Attitudes	.783**	.000	100	Very High
Pupils' Output	**Pupils' Behavioral Attitudes**	.766**	.000	100	Very High

*Correlation coefficient is significant at alpha .05
Correlation Coefficient Scales Adopted from Hopkins, Will (2002):
0.0-0.1 = Nearly Zero; 0.1-0.3 = Low; 0.3-0.5 = Moderate; 0.5-0.7 = High; 0.7-0.9 = Very High; 0.9-1 = Nearly Perfect.

Conclusions

The study concludes the following:

1) The demographic profile of teacher-respondents in the Jolo III District is characterized by a predominance of females. Additionally, a substantial majority falls within the age group of 42 years old and above of age brackets. Furthermore, majority of teacher-respondents have moderate to significant experience in the education sector and holds bachelor's degree.

2) This study concludes drawn from this result is that teacher-respondents at Jolo III District overwhelmingly agree on the effectiveness and importance of integrating audiovisual materials into teaching strategies across various aspects of education, particularly in the context of pupil engagement, output, and behavioral attitude. underscores the importance of continued support and investment in audiovisual resources, professional development initiatives, and instructional practices aimed at

maximizing the potential of audiovisual materials to enrich teaching and learning in Jolo III District.

3) Generally, the extent of the use of audiovisual materials across gender, age, and length of service suggests that factors such as gender, age, and years of service do not significantly influence teachers' utilization of audiovisual resources in teaching strategies. This indicates a consistent approach to incorporating audiovisual materials among teachers regardless of demographic characteristics. In contrast, the significant difference in perception based on educational attainment suggests that teachers with different levels of educational attainment have varying perspectives on the use of audiovisual materials. This highlights the potential influence of educational background on teachers' attitudes and beliefs regarding the effectiveness or importance of audiovisual resources in teaching strategies.

4) Generally, a very high degree of correlation concludes that changes or variations in one sub-category may be accompanied by changes in another sub-category, reflecting a degree of coherence or consistency in teachers' perceptions or practices related to the use of audiovisual materials.

Recommendations

This study recommends the following:

1) Department of Education (DepEd) may allocate resources for the acquisition, development, and maintenance of audiovisual materials and technology infrastructure in schools. This includes investing in modern audiovisual equipment, educational software, and digital resources to ensure teachers have access to up-to-date materials for teaching.

2) Jolo III District faculty members are encouraged to experiment with different types of audiovisual materials and innovative teaching strategies to determine what works best for their students. This can involve exploring new technologies, multimedia resources, and instructional approaches to create engaging and interactive learning experiences.

3) Faculty members may collaborate with colleagues across all districts in Sulu province, share best practices, and exchange ideas for using audiovisual materials in teaching. This can be facilitated through professional learning communities, online forums, and peer mentoring programs to foster a culture of collaboration and continuous improvement.

4) More so, Future researchers in the field of Education are encouraged to include comparative studies to compare the effectiveness of different types of audiovisual materials, teaching strategies, and instructional approaches across different contexts and settings.

Compliance with Ethical Standards

First and foremost, each participant received a detailed informed consent form outlining the trial's objectives, procedures, possible risks and benefits, and confidentiality policies. In addition, all trial data points were meticulously anonymized when the respondents' personal information had no bearing on the trial's outcomes. Data collection

was carried out in a private setting to protect participant privacy, and the collected data was stored in a secure archive that was only accessible by the researchers. All participants were treated with respect, regardless of differences in opinions and points of view.

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"TIKTOK" METHOD: EXPLICIT INSTRUCTIONS IN IMPROVING THE READING COMPREHENSION OF GRADE 11 HUMANITIES AND SOCIAL SCIENCES STUDENTS

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ABSTRACT

Reading is an important skill that must be developed by the students to prepare themselves in facing the competitive world of work. With that being said, Carrascal National High School conducted a Group Screening Test (GST) to determine students who need more guidance and supervision in reading. The identified "frustration" readers were subjected to a One-on-One Reading Activity to ascertain the common reason of their status. Based on the result, poor vocabulary has been on top which delivered the researcher the fervor to develop an intervention to improve reading comprehension. The present action research investigated the effectiveness of "TIKTOK" method (*Think, Integrate, Know, Transcribe, Optimize, Knit*) in improving the reading comprehension of the subjects focusing on their vocabularies. Student participants (n=7) were the identified "frustration" readers in Grade 11 HUMSS Makatao and MakaDiyos who were subjected to an intervention. The research yielded a positive result of producing "instructional" readers both in GST and One-on-One Reading Activity with a mean score of 9 in GST with a comprehension level of "instructional" and a mean percentage score of 60 in One-on-One Reading with a comprehension level of "instructional" based on the scaling specified in Philippine Informal Reading Inventory (PHIL-IRI) Manual. Reading materials were adopted from the Phil-IRI for quality assurance. Finally, one student was still classified as "frustration" reader even after the implementation of the intervention which implied that the use of "TIKTOK" method for some students required a series of cycle before concluding its efficacy due to unique learning habits, style and multiple intelligences.

Keywords: *Reading, TIKTOK Method, Phil-IRI*

INTRODUCTION

Macro skills in communication are the most important skills in teaching a particular language. Each of them is indispensable in the learning process and teaching performance on behalf of the learners and mentors. These skills such as listening, speaking, reading, and writing will use as the main vehicle to obtain definitely a certain language and to serve as a conduit to encompass widely the interrelated realms of communication and global community (Macro Skills Teaching, n.d).

Reading as one of the macro skills in learning a language is defined as a cognitive process that involves decoding symbols to arrive at meaning. It is an active process of constructing meanings of words. Reading with a purpose helps the reader to direct information towards a goal and focuses their attention. Although the reasons for reading may vary, the primary purpose of reading is to understand the text (Sandhu, 2022).

However, reading is one of the common concerns of the teachers that is not totally developed among the learners. In the 2018 Programme for International Student Assessment (PISA), the Philippines scored lowest in Reading out of 79 countries. The PISA further showed that only one in five Filipino learners aged 15 achieved at least the minimum proficiency level in Overall Reading Literacy (San Juan, 2019). This number produced a loud uproar in the Department of Education thrusting the senate to pass a bill to address the problem. In fact, Gatchalian's Senate Bill 150 or the Academic Recovery and Accessible Learning (ARAL) Act seeks to institute a nationwide learning recovery program that will include well-systematized tutorial sessions and well-designed remediation plans. He also proposed to officially make every November National Reading Month under Senate Bill 475, to be celebrated with nationwide reading programs and activities and inculcate a culture of reading among basic education learners and their communities (Philippine News Agency, 2022).

As a result, the Department of Education disseminated to all public elementary and secondary schools DepEd Memo No. 173 s. 2019 the need to strengthen the reading proficiency of every learner and to nurture a culture of reading which is a requisite skill in all content areas. This mandated the teachers to inject reading activities to the learners during their class periods to intensify the commitment to make every learner a reader at his/her grade level.

Nonetheless, looking at the grassroots of education, there are still students who encountered challenges in reading particularly in the word recognition and comprehension. According to Perfetti (n.d), difficulties with fluent word reading can stem from different underlying causes. Problems with automatic word recognition can contribute to difficulties with fluency, and in turn, often cause problems with comprehension. Fluent reading is necessary for comprehension, because attention required for effortful reading draws resources away from comprehension.

Considering that there are many factors affecting the reading skills of the students, teachers have the capability to strategize varied interventions to support and to cater the

needs of the learners. Hence, teachers must design methods or interventions that will serve as a scaffold in improving students' performance. Bidabadi et. al. (2016) illustrated that a good teaching method helps the students to question their preconceptions, and motivates them to learn, by putting them in a situation in which they come to see themselves as the authors of answers, and as the agents of responsibility for change.

As directed by the Department of Education to conduct reading examinations in all grade levels to determine the comprehension skills of the students, Carrascal National High School was serious in implementing the mandate. As a result, there were few students in Grade 11 HumSS Strand who were classified as "frustration" readers. To define exactly the root cause of such event, a one-on-one reading text was conducted. Based on the feedback of the subjects, they have difficulty understanding the text due to poor vocabulary that greatly affected their reading comprehension. Hence, "TIKTOK" method was constructed.

Finally, the conduct of this "TIKTOK" method will serve as an intervention vehicle for the teachers in improving the reading skills chiefly of the 7 Grade 11 HumSS students belonging to sections Makatao and MakaDiyos of Carrascal National High School who were identified with "frustration" level in the mentioned macro skill. They have difficulties in comprehending the material due to poor vocabularies. Accordingly, this method is purposely made to create a more authentic learning while promoting meaningful and enjoyable experience. Also, this method will capture not only what the students know about the reading skill but likewise to apply that knowledge in a "real- world" situation. Combining both the integrated approach and performance- based assessment will definitely contribute to the students' acquisition of the 21st century skills while improving their academic performance.

RESEARCH QUESTIONS

This study aimed to determine the effectiveness of utilizing 'TIKTOK' Method in improving the reading comprehension level of the Grade 11 HUMSS students. Specifically, it sought to answer the following questions:

1. What is the student's comprehension level in GST and one-on-one reading before implementing an intervention?
2. What is the student's comprehension level in GST and one-on-one reading after implementing an intervention?
3. Is there a significant difference between the comprehension level of the students' GST and one-on-one reading scores before and after the implementation of the intervention?

METHODOLOGY

The researcher utilized a "TIKTOK" method as an intervention to improve reading comprehension of the subjects focusing on their vocabulary development. "TIKTOK" stands for **T**hink, **I**ntegrate, **K**now, **T**ranscribe, **O**ptimize, **K**nit. It is a method that is

designed to tailor fit the needs of the students. It will allow the teacher to structure an entire instruction that will serve as a scaffold in mastering the reading skill.

Think is the first stage where the teacher identifies the possible reason why the learner failed to reach independent and instructional reading level. According to Nathan V, there mainly causes for problems in reading comprehension.

A. Decoding Difficulties
    1. Trouble sounding out words and recognizing words out of context;
    2. Confusion between letters the sounds they present;
    3. Slow oral reading rate (reading word by word)
    4. Reading without expressions;
    5. Ignoring punctuation while reading
B. Comprehension Difficulties
    1. Confusion about the meaning of words and sentences;
    2. Inability to connect ideas in a passage;
    3. Omission of, or glossing over details;
    4. Difficulty distinguishing significant information from minor details;
    5. Lack of concentration during reading.
C. Retention Difficulties
    1. Trouble remembering or summarizing what is read;
    2. Difficulty connecting what is read to prior knowledge;
    3. Difficulty applying content of a text to personal experiences.

In this case, the identified difficulty encountered by the respondents was the reading comprehension. According to the learners, they have the tendency to misunderstand the selection because they were not capable of pulling out main points and absorbing more information due to lack of vocabularies. As a result, they cannot provide the exact answer to the follow-up questions.

Once the reason is clear, ***Integrate*** will follow. The teacher will start utilizing a technique that will serve as a strategy in teaching the student what to do in mastering the macro skill. Since the problem has been defined, the researcher will commence the use of “ENGLISH” to help the students improve their reading comprehension level. While giving the students enough time to read a given selection, they will start using the “ENGLISH” technique.

E- Elicit unknown words from the story that are difficult to decode.
N- Navigate the meaning of the words from the dictionary (printed or online).
G- Generate synonyms and antonyms of the unknown words.
L- Learn to demonstrate each unknown words by acting it out in front of the teacher.
I- Illustrate understanding of words by crafting tailored sentences.
S- Scamper to the part of the story where the unknown word was used.
H- Have the student discuss the story based on their understanding.

Know is the third phase where the teacher provides written questions to be answered by the students to determine their reading comprehension level.

The fourth phase is ***Transcribe***. It is significant to necessitate the students to write the important details they have assimilated from the discussion of the teacher to determine their level of understanding. This stage will end by tasking the learners to compose their personal reflections and make a summary about their learning.

S	State the importance of vocabulary in reading comprehension.
I	Identify the unknown words.
N	Note personal sentences using the unknown words.
T	Think of other challenges you encountered in reading the selection/story.
O	Offer solutions to overcome the identified challenges.
S	Summarize your learning.

Optimize takes the fifth stage where the students will be given with different reading materials with follow-up questions to practice his/her reading comprehension. This is a long-term activity where teacher required the students to continue reading as part of the continuous learning. When students continue to struggle with the language, most of the time we would tell them to spend more time practicing the language skills. Thus, reading more materials can optimize their comprehension skills.

The final phase is ***Knit***. This is where the students will join together the concepts, knowledge, and ideas attained from the intervention.

The researcher-made “TIKTOK” method is the combination of various strategies present in each part of the method. It addresses the different needs of the students thus, making it useful to the teachers. The promptness of this research is due to the specific reason of having poor vocabulary affecting students’ reading comprehension making them as “frustrated” readers. Digging inspiration from the present scenario, the utilization of “TIKTOK” Method in mastering reading comprehension skill has been established.

The intervention will be carried out during the first quarter of second semester of school year 2022-2023 in Grade 11 Humss students in Carrascal National High School.

Action Research Method

A. Participants and/or Other Sources of Data and Information

This study was conducted in Carrascal National High School located at National Highway, Barangay Gamuton, Carascal, Surigao del Sur. Specifically, the study was piloted in the Senior High School Department employing Grade 11 HUMSS students of sections Makatao and MakaDiyos. Specifically, there were 3 students from Makatao and 4 students in MakaDiyos.

This study employed a reading material as the primary source of data. The materials were adapted from the Philippine Informal Reading Inventory (Phil-IRI) to ensure quality assurance.

The simulation of the intervention happened on March 31, 2023, Friday during ICL period with the Grade 11 STEM students to test the efficacy of the method. The intervention was officially conducted on April 17- May 3, 2023 comprising the 9th and 10th week of the 3rd quarter during the review weeks before the final examination to avoid disruption of regular classes of the subjects.

B. Data Gathering Methods

On January 2023, the researcher conducted a “Group Screening Test” (GST) to determine the reading capabilities of the grade 11 students. A 20- item test was administered and scores were interpreted. After the test, 10 HumSS students who scored 1-7 were classified as “frustration” and subjected to one-on-one reading activity. During the one-on-one activity on February 2023, 3 out of 5 students in grade 11 HumSS Makatao and 4 out of 5 learners in MakaDiyos were still classified as “frustration” readers since they got below 58% in their comprehension score or the students failed to get 3 correct answers out of 5 questions.

The reading material from the Philippine Informal Reading Inventory (Phil-IRI) was adapted to identify the decoding difficulties of the students including but not limited to sounding of words, punctuation marks, confusion between letters and slow oral reading as well as retention difficulties and comprehension difficulties. The result of the activity determined students who were considered as “frustrated” readers and they were subjected to an intervention.

During the intervention on April 2023, the researcher administered the “TIKTOK” Method following the logical order of steps to make sure that students’ needs were addressed. The method aimed to improve the reading comprehension of the students from “frustration level” to “instructional” and “independent” readers.

After the intervention, different reading material was given to the students for the post-reading to identify the efficacy of the “TIKTOK” Method and to prevent discrepancies on the result since some of the learners have the tendency to memorize or remember the correct answers of the previous material. The reading material was adopted from the PHIL-IRI to ensure the same level of difficulty as to the material used during the pre-reading activity. Also, another 20- item test for GST was administered to determine if there was an improvement in the students’ reading comprehension. Comparison and interpretation of result happened after the collection of data.

While the learner was reading a selection, an assessment tool was used by the researcher to decide the comprehension score attained by the students. The instrument was taken from the Philippine Informal Reading Inventory (Phil-IRI) to maintain quality

assurance. A letter of consent was submitted to the office of the principal to have a permission to conduct the action research.

Finally, the data gathered from the actual implementation of intervention was analyzed and interpreted using the percentage of correct answers to comprehension questions as specified in the Phil-IRI Manual page 21.

Table 1: Table of Percentage for Comprehension Scores (One-on-One)

No. of Items	Score in Comprehension	%
5	5	100
	4	80
	3	60
	2	40
	1	20

Table 2: Phil-IRI Oral Reading Profile (One-on-One)

Reading Level	Comprehension Score (in %)
Independent	80-100
Instructional	59-79
Frustration	58% and below

Table 3: Group Screening Test (GST) Level

Reading Levels & Scores			
14 & Above	**8 to 13**	**1 to 7**	**0**
(Independent)	(Instructional)	(Frustration)	Non-Reader

RESULTS

1. What is the student's comprehension level in GST and one-on-one reading before implementing an intervention?

Table 4. GST and One-on-One Comprehension Level Before Intervention

Student	Group Screening Test (GST) Scores		One-on-One Reading Scores		
	Before	Comprehension Level	Befre	%	Comprehension Level
1	6	Frustration	2	40	Frustration
2	5	Frustration	2	40	Frustration
3	6	Frustration	2	40	Frustration
4	4	Frustration	1	20	Frustration
5	6	Frustration	2	40	Frustration
6	5	Frustration	2	40	Frustration
7	5	Frustration	1	20	Frustration
Mean	**5.3**	**Frustration**	**1.7**	**34**	**Frustration**

GST: 20- item test; One-on-one reading: 5-item comprehension questions

Table 4 presented the reading performances of the subjects before the implementation of the "TIKTOK" method both in GST and one-on-one reading. All of the students were identified as "frustration" readers based on the scores they attained as defined in Phil-IRI Manual with a total GST mean score of 5.3 with a comprehension level of "frustration" and One-on-One Reading percentage score of 34 with a comprehension level of "frustration." The scores signified that the learners failed to comprehend the given materials because of their poor vocabulary. According to the study of Nanda and Azmy (2020), they indicated that poor reading comprehension occurs due to three remarkable factors which were students; lack of motivation, low prior knowledge and poor English vocabulary. Having limited vocabulary has been identified as an impairment of reading comprehension and thus, the government emphasized that students must master between 2,500 to 3, 000 English words to comprehend English academic texts.

Lastly, this result served as an eye-opener most particularly to the educators to look for solutions to address the problem in reading comprehension. Developing interventions must be seriously shaped and constructed to help the learners acquire the needed skill to face the competitive world of work.

2. What is the student's comprehension level in GST and one-on-one reading after implementing an intervention?

Table 5. GST and One-on-One Comprehension Level After Intervention

Student	Group Screening Test (GST) Scores		One-on-One Reading Scores		
	After	Comprehension Level	Afetr	%	Comprehension Level
1	9	Instructional	3	60	Instructional
2	9	Instructional	2	40	Frustration
3	8	Instructional	3	60	Instructional
4	12	Instructional	4	80	Independent
5	11	Instructional	3	60	Instructional
6	8	Instructional	3	60	Instructional
7	9	Instructional	3	60	Instructional
Mean	9	**Instructional**	**3**	**60**	**Instructional**

GST: 20- item test; One-on-one reading: 5-item comprehension questions

The table showed the significant progress made by the respondents in GST and One-on-One Reading activities after the implementation of the "TIKTOK" method. In Group Screening Test (GST), all of the subjects got a number of correct answers ranging from 8-13 making them an "instructional" reader with a mean GST score of 9.

In one-on-one reading test, 6 students out of 7 were classified as “instructional” and “independent” readers respectively based on the classification of scores defined in Phil-IRI Manual. Majority of them got 3 correct answers out of 5 comprehension questions and 1 got 4 correct answers. However, one student was still considered as “frustration” reader since she got only 2 correct answers even after the used of the method.

The result signified that the intervention utilized by the researcher failed to produce 100% instructional and independent readers. Nonetheless, the improvement in the reading comprehension has denoted the effectiveness of the “TIKTOK” method in enhancing the vocabulary of the learners leading to better reading comprehension. In the study piloted by Wanzek et al. (2017), they examined the multicomponent reading intervention for students with reading comprehension difficulties including the latent word reading, and latent vocabulary. Their findings indicated that students receiving the intervention made greater gains in reading comprehension than students who did not receive the intervention. This implied that the implementation of intervention played a major role in developing and enhancing the academic performance and skills of the students. Hence, teachers should develop strategic materials and methods to aid the learners in acquiring the expected skills that they can use in the future.

3. Is there a significant difference between the comprehension level of the students’ GST and one-on-one reading scores before and after the implementation of the intervention?

Table 6. GST and One-on-One Comprehension Level Before and After Intervention

STUDENT	Group Screening Test (GST) Scores				One-on-One Reading Scores					
	Before	Comprehension Level	After	Comprehension Level	Before	%	Comprehension Level	After	%	Comprehension Level
1	6	Frustration	9	Instructional	2	40	Frustration	3	60	Instructional
2	5	Frustration	9	Instructional	2	40	Frustration	2	40	Frustration
3	6	Frustration	8	Instructional	2	40	Frustration	3	60	Instructional
4	4	Frustration	12	Instructional	1	20	Frustration	4	80	Independent
5	6	Frustration	11	Instructional	2	40	Frustration	3	60	Instructional
6	5	Frustration	8	Instructional	2	40	Frustration	3	60	Instructional

7	5	Frustration	9	Instructional	1	20	Frustration	3	60	Instructional
MEAN	**5.3**	**Frustration**	9	**Instructional**	**1.7**	**34.3**	**Frustration**	**3**	**60**	**Instructional**

GST: 20- item test; One-on-one reading: 5-item comprehension questions

The table summarized the comprehension level of the students in GST and one-on-one reading before and after the intervention. It clearly showed the significant improvement in the reading comprehension of the subjects after the implementation of the "TIKTOK" method. The total GST mean score of the students before the method was 5.3 with a comprehension level of "frustration" as defined by the Phil-IRI manual. After the intervention, the total mean GST score was 9 with a comprehension level of "instructional."

Furthermore, the total percentage score of the respondents in one-on-one reading was 34.3 with a comprehension level of "frustration." However, after the intervention the performance of the students was improved with a total percentage score of 60 with a comprehension level of "instructional."

Hence, the researcher was successful in improving the reading comprehension skills of the students by enriching their vocabularies through explicit instructions using the "TIKTOK" method. This claim was supported by the study conducted by Nilsson (2021), when she clearly stated that targeted reading instruction intervention supported growth in vocabulary development, comprehension, and phonological awareness of the students. With the data presented, it encouraged the teachers to craft various interventions to improve the reading comprehension of the students.

Group Screening Test (p<0.05)

Paired Samples T-Test

			statistic	df	p
A	B	Student's t	-5.62	6.00	0.001

One-on-One Reading (p<0.05)

Paired Samples T-Test

			statistic	df	p
A	B	Student's t	-3.58	6.00	0.012

Based on the result of the paired t-test, both GST and One-on-One Reading yielded a p-value of 0.001 and 0.012 respectively which were less than the significant value of 0.05. This signified that the implementation of the “TIKTOK” method produced a statistically significant results that indicated strong evidence against the null hypothesis.

Hence, accept the alternative hypothesis that there is a significant difference between the comprehension level of the students’ GST and one-on-one reading scores before and after the implementation of the intervention.

Conclusions

- The comprehension level of the students in GST and one-on-one reading before and after the intervention clearly showed the significant improvement in the reading comprehension of the learners after the implementation of the “TIKTOK” method. The total GST mean score of the students before the method was 5.3 with a comprehension level of “frustration” as defined by the Phil-IRI manual. After the intervention, the total mean GST score was 9 with a comprehension level of “instructional.”

- Furthermore, the total percentage score of the respondents in one-on-one reading activity before the intervention was 34.3 with a comprehension level of “frustration.” However, after the intervention the performance of the students was improved with a total percentage score of 60 with a comprehension level of “instructional.”

- Hence, the researcher was successful in improving the reading comprehension skills of the students by enriching their vocabularies through explicit instructions using the “TIKTOK” method. This claim was supported by the study conducted by Nilsson (2021), when she clearly stated that targeted reading instruction intervention supported growth in vocabulary development, comprehension, and phonological awareness of the students. With the data presented, it encouraged the teachers to craft various interventions to improve the reading comprehension of the students.

Compliance with Ethical Standards

The author sought an approval from the Office of the Principal of Carrascal National High School to conduct the action research to the Grade11 Humanities and Social Sciences (HumSS) students. Respondents were well-informed on the purpose and objectives of the research and they have the freedom to withdraw from the study at any time as they wanted to. Parents’ consent was also provided to inform the parents on the conduct of the research and that their children were considered as the respondents.

Respondents’ identity were kept confidential at all times to safeguard the well-being of the students. The author also declared that there has no conflict of interest while doing the action research.

The author also attested to the originality of the research and has cited properly all the references used. Finally, there was no bias in the interpretation of the findings and the results were utilized purely for research.

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TOTAL QUALITY MANAGEMENT OF INCLUSIVE EDUCATION IMPLEMENTATION IN THE DIVISION OF RIZAL: A BASIS FOR PROGRAM ENHANCEMENT

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ABSTRACT

This study focused on the total quality management (TQM) of implementation of Inclusive Education (IE) for learners with special educational needs (LSENs) or learners with disabilities (LWDs) among public senior high schools (SHS) in the Division of Rizal. The researcher used the quantitative method, specifically, the descriptive survey design to gather data from the administrators, teachers, and parents of LSENs from eight (8) public SHSs with identified LWDs in the School Year 2023-2024. The study revealed that TQM of IE implementation for LSENs was highly implemented in all the principles of TQM namely: commitment of top management, customer focus, process management, instituting training on the job, instituting leadership, driving out fear, eliminating management by objectives, removing barriers to pride in workmanship, implementing education and self-improvement, and making transformation a job for everyone at work. The responses of administrators, teachers, and parents had a significant difference in terms of removing barriers to pride in workmanship; and Implementing education and self-improvement for everyone. Lastly, the administrators and teachers found the inclusive education implementation for LWDs very challenging because of the lack of training of teachers. On the other hand, the administrators and teachers found it only moderately challenging as regards having lack of support from higher officials and LGUs; lack of awareness, support, and participation from parents; having limited interventions and services at the school level; unclear implementation down to classroom level; having lack of initiatives in enhancing community awareness and relationship; lack of physical facilities and equipment; and there was a poor monitoring and evaluation process.

Keywords: *Total Quality Management, Inclusive Education, Learners with Special Educational Needs, Learners with Disabilities, SNED Program, Senior High School, Polytechnic University of the Philippines, Doctor in Education Management*

INTRODUCTION

According to the data from societies worldwide, around 240 million, or one in every ten children, have a disability of some kind, which raises serious concerns about providing equal access and quality education (UNICEF, 2021). Hence, equity and quality education, which specifically addresses such issues can likely lead to appropriate skill and career development. It is the reason why some global organizations and agencies intensify inclusive education (IE).

The Sub-Education Review Report on IE by UNESCO (2021) pointed out the opportunities for learners with disabilities, whether physical, mental, social, or emotional in Asian Countries, including the Philippines, to receive assistance, access, and equal participation in education. However, there were challenges faced by these countries in inclusion implementation especially that they had to address global concerns. Concerning this, teachers' participation and cooperation; their viewpoint; expertise; and experience were contributing factors as to whether the implementation would succeed or fail. In the end, both administrative efficacy and dedication may have a significant influence on how well IE is implemented.

In the Philippines, out of the projected 444,294 children with special educational needs, only 112,810 were enrolled in 2021 (Romero, 2021). Although this was slightly higher than those who were enrolled in the previous year, it was still lower than the projected number of children with special educational needs. Despite this, the number of pupils with disabilities enrolled decreased by 74% from its pre-pandemic level of 360,879, according to the statistics cited. Other than the unstable enrollment, concern about the number of schools serving as SPED Schools/Centers is challenging the educational system. There are only about 485 public Elementary and 164 public High Schools in the Philippines that serve as SPED Schools/Centers (National Council on Disability Affairs [NCDA], 2023). These numbers are not enough to achieve and sustain the goals of education for LWDs. When considering access to IE as an indicator of success; these data show that an IE in the Philippines needs to be intensified to reach more LWDs/LSENs and provide them equal opportunities to acquire quality education.

Looking at the SHS implementation among regions in the Philippines, DepEd 4-A former Regional Director Diosdado San Antonio stated that CALABARZON was the biggest among the 17 regions in the country that implemented the SHS program (Montemayor, 2018). Hence, their failure could have influenced the nationwide result of the program and that could include the outcome of inclusive education implementation for learners with disabilities. The said region has only 38 public elementary and 11 public high schools serving as SPED schools where only four elementary and two high schools are in Rizal Province. The figures imply a very minimal number of public SPED Centers throughout the province of Rizal (NCDA, 2023).

Fortunately, policy guidelines for program implementers, stakeholders, and the school community were issued. It comprises the implementation of appropriate

interventions and services for learners with special educational needs at all key stages in public and private schools. So, like elementary and junior high school levels, the SHS envisions access and quality, benefiting from the system that DepEd offers (DepEd, 2023). Thus, this policy (DepEd Order No. 44, s. 2021), assures that learners with disabilities can now be mainstreamed and be given equal possibilities to actively engage in the K–12 Basic Education Program.

In connection to that, issues and concerns like unstable enrollment for the past years and the minimal number of SPED Centers throughout the Philippines clearly attest that IE on Learners with Disabilities usually takes place only in elementary and junior high schools. Hence, it articulates a gap in the implementation of inclusive education for LWDs across all key stages. In addition, it can also be noted that in the general context of inclusive education, the elementary and junior high school levels comprise more Inclusive Education offerings than Senior High School.

Ultimately, it illustrates the importance of research pertaining to identifying and addressing issues and challenges; and discussions about the quality implementation of inclusive education for learners with disabilities especially at the senior high school level that has only been established in less than a decade. Therefore, this study aimed to assess the total quality management (TQM) of IE implementation for LWDs, in public senior high schools in Rizal province as a basis for program enhancement.

The implementation of inclusive education for students with disabilities in the Philippines is regulated by the policies and guidelines outlined in DO 44 s, 2021. Guidelines for Identification and Referral, Assessment Services, Adaptation of the K–12 Curriculum for LWDs, Development of an Individualized Educational Plan (IEP), Resource Room Services, Educational Placement, Program Delivery, and Program Management at the school level are all outlined in the aforementioned policy. Concerning program implementation, organizations around the world recognize Dr. Deming's total quality management, which emphasizes customer satisfaction and continuous improvement, as an effective management strategy (Deming, 2018). As criteria or indicators, the principles of total quality management are implemented in a variety of institutions and organizations.

Shourbagi (2017) proposed that in order to foster a more robust partnership between schools and parents, top-level management should ensure that educators and parents maintain an ongoing dialogue during the planning and execution phases of inclusive education. Furthermore, it is critical that leaders have a comprehensive understanding of the specific activities conducted within their institutions in order to identify potential solutions to the obstacles and constraints (Mittal et al., 2019). Furthermore, total quality management practices have the potential to influence the performance of educators by means of knowledge sharing (Saffar et al. 2020).

Adverse comments were identified, such as schools that implemented TQM to a moderate extent in research and budget allocation (Avila, 2018); and administrators who lacked significant proficiency in TQM when it came to budget allocation and research.

However, it is worth noting that some principals exhibited a deficiency in their comprehension of inclusive education management, which consequently resulted in a failure to adequately support students with special needs in adherence to relevant regulations (Rahmi, et al., 20

Moreover, client satisfaction required an awareness of the school's mission (Bagrova, et al., 2020) and the requirements of its students (Muega, 2016; Al Qahtani, et al., 2015). In the realm of process management, total quality management practices can function as a framework for guidance, particularly in situations where administrators and teachers may experience uncertainty or doubt regarding their own performance in relation to the management of inclusive education for LSENs (Muega, 2016). Similar to other types of organizations, schools are susceptible to inadequate quality control practices (Al-Qahtani et al., 2015).

In comparison to total quality management practices, training enables educators to comprehend instruction prior to practical application; it influences educators' productivity, leading to increased satisfaction (Dziuba, et al., 2020); this is due to the fact that training is the determining factor in employees' perceptions of their own performance; it fosters employee engagement in the learning process; and it facilitates instruction comprehension prior to practical application (Mo, et al., 2022). However, it is worth noting that some educational institutions in a specific province of the Philippines employed instructors with comparatively inadequate training (Masongsong, et al., 2023). This suggested that the efficacy of educators might depend less on their formal education and more on their inherent abilities and pre-existing knowledge.

Likewise, administrators may seek to engage and empower faculty and staff, as research indicates that empowered personnel exhibit greater job satisfaction and performance (Davidescu et al., 2020). This would likely elicit a favorable reaction from stakeholders regarding the execution of the aforementioned initiative.

Additionally, open communication was recommended (Zaman, et al., 2016), and the source of instructors' apprehension regarding the implementation of inclusive education programs should be identified. This may be the result of external factors including inadequate managerial competencies, insufficient knowledge and skills regarding change implementation, communication deficiencies, insufficient employee team building, and insufficient work organization or empowerment (Bugdol, 2020).

Certain educational institutions that had not undergone adequate monitoring and evaluation during the implementation of inclusive education could benefit greatly from the elimination of management by objectives. This would constitute a substantial step toward achieving continuous improvement (Rahmi, et al., 2021).

Likewise, in order to attain a more comprehensive comprehension of the TQM concept, it is imperative to acknowledge the obstacles that impede the implementation of TQM within organizations (Alghamdi, 2016). Obstacles to the implementation of TQM, according to Deming (2018), include a lack of purpose consistency, short-term thinking,

annual performance reviews that fail to account for employee development, job-hopping due to attrition concerns, and the reliance on visible metrics.

Furthermore, a number of studies have highlighted the insufficient application of education and self-improvement strategies. It is recommended that educators participate in seminars and training regarding inclusive education. An observation was made regarding educators who instructed LWDs but deemed themselves unqualified to instruct LSENs due to insufficient training (Allam & Martin, 2021). The same conclusions were drawn: notwithstanding teachers' personal expertise, they required a variety of current special education seminars, workshops, and training to equip them with the necessary skills to manage students' behavior and to impart lessons to their mainstream counterparts (Ecoben, 2016).

Finally, to increase the level of implementation of inclusive education for students with special educational needs, administrators, teachers, and parents must examine possible effective approaches and best practices, according to a number of studies, in order to foster a workplace transformation that requires the participation of all employees (Pajarillo, 2019).

Research Questions

The study assessed the total quality management (TQM) of inclusive education implementation for learners with disabilities in the division of Rizal for a basis for program enhancement. Specifically, it sought to answer the following questions:

1. How did the school administrators, teachers, and parents rate the TQM of inclusive education implementation for learners with disabilities in the division of Rizal in terms of:

1.1. commitment of top management;
1.2. customer focus;
1.3. process management;
1.4. instituting training on the job;
1.5. instituting leadership;
1.6. driving-out fear;
1.7. eliminating management by objectives;
1.8. removing barriers to pride of workmanship;
1.9. implementing education and self-improvement for everyone; and
1.10. making transformation a job for everyone at work?

2. Is there any significant difference in the assessment of TQM of inclusive education implementation for learners with disabilities among administrators, teachers, and parents in terms of the above-mentioned key elements of TQM?

3. What were the challenges encountered by the school administrator respondents and teacher respondents in regard to the implementation of inclusive education for learners with disabilities?

Hypothesis

Given the stated research question, the null hypothesis was tested:

Hypothesis 1: There is no significant difference in the assessment of TQM of inclusive education implementation for learners with disabilities among the administrators, teachers, and parents in terms of the principles of TQM: commitment of the top management; customer focus; process management; instituting training on the job; instituting leadership; driving-out fear; eliminating management by objectives; removing barriers to pride of workmanship; implementing education and self- improvement for everyone; and making transformation a job for everyone at work.

METHODOLOGY

In the survey, eight schools were included. Eight administrators, one hundred fourteen (114) instructors, and forty-nine (49) parents comprised the population, for a grand total of one hundred seventy-one (171) individuals. The researcher gathered data from a sample size of one hundred and fifty-two (152) respondents. . They were the administrators, senior high school teachers, and parents. The administrators are principals who have identified students with disabilities. They are ones who bear responsibility for the implementation and stringent observance of the provisions outlined in DO 44, section 2021. The Seniors High School Teachers are general education teachers (as per DO 44, s. 2021) who instruct classes with identified students who have special education requirements and are affiliated with eight schools in the Division of Rizal. They are regarded as the primary agents of inclusive education implementation. Lastly, parents as the legal custodians or parents of students who have been identified as having special educational needs or disabilities. By actively participating as members of the school community, they gain a more comprehensive comprehension of the condition of each student.

As a foundation for program improvement, the purpose of the study was to evaluate the comprehensive quality management (TQM) of inclusive education implementation for students with disabilities in the division of Rizal. In order to respond to the study's problem statement and research inquiries, the investigators employed a questionnaire that they had developed using both paper and pen and Google Forms.

Three specialists validated the questionnaire, which was then translated into Filipino so that it could be readily understood by the parents. The initial segment of the survey involved profiling, which aimed to ascertain the respondents' professional status as parents, educators, or administrators. The second component comprised a 50-item Likert scale that utilized the ten principles of TQM as indicators to assess the degree of implementation of inclusive education for students with disabilities. Five indicators were designated for each TQM principle. Items 1-5 addressed the commitment of top

management, while Items 6-10 addressed process management. Items 11-15 dealt with process management. Items 16 to 20 addressed the implementation of on-the-job training, items 21-25 addressed leadership implementation, items 26-30 addressed driving out fear, items 31-35 addressed eliminating management by objectives, items 36-40 addressed removing barriers to pride in workmanship, items 41-45 addressed implementing education and self-improvement for all, and items 46-50 addressed making transformation a job for every employee.

Ten items comprised the third section, which assessed the degree to which respondents agreed with each of the obstacles associated with instituting inclusive education for LWDs. The participation of principals and instructors was limited to the third section of the survey.

After conducting pilot tests of the instrument in public senior high schools in Quezon City, the collected data were subjected to reliability analysis. With a reliability coefficient of 0.984, the TQM instrument demonstrates exceptional internal consistency reliability. Ultimately, the questionnaire pertaining to the Challenges Encountered in the TQM implementation possesses a reliability coefficient of 0.929. This value signifies that each item possesses exceptional internal consistency reliability.

The researcher coordinated her data-collection process, procedure, and actions with her advisor in order to obtain permission, conduct surveillance, and take appropriate actions. The researcher approached the Superintendent of the Schools Division for authorization to conduct an investigation in the Division of Rizal's Public Senior High Schools. The researcher developed a questionnaire while awaiting the permit and subsequently sought the validation of three specialists in the domain of inclusive education, with a specific focus on the SNED Program. After confirming the questionnaire's validity, the investigators approached the University Research Ethics Center (UREC) for approval to proceed with the study. Upon receiving approval from the UREC to conduct the study, the researcher approached the Institution for Data and Statistical Analysis (IDSA) for statistical services. The researcher was then recommended by the IDSA to the University Statistician.

Subsequently, the researcher approached the Schools Division Superintendent of Quezon City for authorization to administer the pilot testing in a subset of senior high schools located in QC. The researcher performed a pilot test and forwarded the data to the statistician in order to assess the reliability of the instrument. As soon as the statistician confirmed the instrument's reliability, the researcher arranged with the Division Coordinator for the SNED program to request the names of schools that had identified students with disabilities. The researcher then collected data in the Division of Rizal with the superintendent of the school division's approval.

The researcher solicited permission from the school principals to conduct a study in their respective institutions by composing a letter that detailed the purpose and scope of the research. The researcher coordinated with the senior high school's assistant principal, coordinator, or adviser of each LWD to provide an explanation of the study's

scope and purpose once the principal granted permission for data collection. The researcher requested the assistance of the relevant school personnel in disseminating the questionnaires to the parents of identified LWD. The questionnaires were hardcopy and written in Filipino. Additionally, the researcher provided a QR Code for a research questionnaire, in the event that a parent preferred to complete it via Google Forms.

The researcher then requested that administrators and educators to complete the questionnaire (in English). The respondents were able to access the Google Form via QR Code or printed copy. The researcher visited each participating school and utilized text messaging, messenger, phone calls, and in-person visits to ensure that the necessary number of responses were collected. The entirety of the responses was collected within a single month. The collected data were subsequently forwarded to the university statistician for statistical analysis by the researcher.

The descriptive statistic used by the researcher was the median. This was used to determine how the administrators, teachers, and parents rated the total quality management of inclusive education implementation for learners with disabilities in division of Rizal in terms of principles of TQM; what the challenges encountered by the administrators and teachers in regard to implementation of inclusive education for learners with disabilities. In addition, to determine whether to reject or fail to reject the null hypothesis, “There is no significant difference in the assessment of administrators, teachers, and parents on the TQM of inclusive education implementation for learners with disabilities in terms of the above-mentioned key elements of TQM”, the researcher used inferential statistic under nonparametric test, Kruskal-Wallis H- Test, a non-parametric equivalent to the One-Way ANOVA. It was because the independent data was categorical and the dependent data was ordinal/continuous. The Likert scale is ordinal data because the items have a clear rank order, but do not have an even distribution.

RESULTS

To ensure the quality and efficacy of an organization, adherence to certain fundamental principles of total quality management is imperative. Production of cost-effective, high-quality commodities and services, cost reduction, long-term demand, and efficiency are the principal objectives of management.

Assessment of School Administrators, Teachers, and Parents from Public Senior High Schools in the Division of Rizal on Inclusive Education Implementation in Terms of Commitment of Top Management

The commitment of Top Management- school administrator, is essential for establishing a consistent goal for bettering goods and services. It discusses establishing a goal and exhibiting dedication.

Table 1
Respondents' Assessment of TQM of Inclusive Education Implementation in Terms of Commitment of Top Management

Commitment of Top Management	Median Response of Administrators	Median Response of Teachers	Median Response of Parents	Overall Median	Verbal Interpretation
1. Our school promotes the inclusion of LWDs with mild to moderate disabilities in the regular classroom or mainstreamed classes by providing programs and services to our LWDs.	4.50	4.00	4.00	4.00	**HLI**
2. Our school involves teachers and parents in planning for LWDs through the School Improvement Plan (SIP) and/or Annual Implementation Plan (AIP).	4.50	4.00	4.00	4.00	**HLI**
3. Our school is committed in ensuring constant improvement toward a quality of service for LWDs such as innovation in allocating resources for long-term planning including research and education; and having school guidelines to follow in implementing inclusive education for learners with disabilities.	4.50	4.00	4.00	4.00	**HLI**
4. Our school communicates the vision, aims, goals, and objectives with the aim of constant improvement on the implementation of inclusive education for learners with disabilities to the parents, community, and other stakeholders like LGU, etc.	4.50	4.00	4.00	4.00	**HLI**
5. Our school is committed to carrying out activities with the aim of successful and sustainable implementation of inclusive education for LWDs in terms of leadership.	4.50	4.00	4.00	4.00	**HLI**
Overall Median	4.50	4.00	4.00	4.00	**HLI**

1.00 - 1.50 Very Low Level of Implementation (VLLI)
1.51 - 2.50 Low Level of Implementation (LLI)
2.51 – 3.50 Moderate Level of Implementation (MLI)
3.51 – 4.50 High Level of Implementation (HLI)
4.51 – 5.00 Very High Level of Implementation (VHLI)

In terms of the commitment of top management, the table details the administrators', teachers', and parents' evaluation of the TQM of inclusive education implementation in public senior high schools in Rizal.

The median score for each indicator is 4.00, which is interpreted verbally as indicating a high level of implementation. The administrators obtained the highest median score of 4.50 among the three categories, further suggesting a substantial degree of implementation.

This suggests that the administrators believe that they are implementing inclusive education in accordance with TQM principles and that they comply with Deped Order 44, section 2021, which underscored the obligation of school principals to rigorously enforce its stipulations.

Furthermore, the feedback from the educators and the guardians suggests that the upper management is committed to instituting inclusive education for students with disabilities; however, further progress is required to attain an exceptionally high level of implementation. This implies that ongoing collaboration between the parents and the schools can be strengthened through the inclusion of the teachers and the parents in the planning and execution of inclusive education for students with disabilities (Shourbagi, 2017).

In addition, the researcher asserts that the leaders must have a comprehensive understanding of the specific activities conducted within their educational institutions in order to identify potential alternatives (Mittal, et al., 2019) and resolutions to the obstacles and constraints. Furthermore, by exchanging knowledge, TQM practices can have an effect on the efficacy of educators (Saffar, et al. 2020).

Conversely, the findings of this study contradicted those of Avila (2018), which found that schools implemented TQM to a moderate degree with regard to budget allocation and research, and that administrators lacked significant proficiency in TQM application with regard to budget allocation and research. Furthermore, according to research by Rahmi, et al. (2020), some principals continued to lack a comprehensive understanding of inclusive education management and exhibited a lack of dedication to servicing students with special needs in compliance with relevant regulations.

Assessment of School Administrators, Teachers, and Parents from Public Senior High Schools in the Division of Rizal on Inclusive Education Implementation in Terms of Customer-Focus

Customer-Focus is an action of school administrators and teachers, which entails embracing a new worldview; waking up to the task, taking on leadership roles, and learning duties in order to bring about change by clearly communicating the mission to all stakeholders.

Table 2
Respondents' Assessment of TQM of Inclusive Education Implementation in Terms of Customer Focus

Customer Focus	Median Response of Administrators	Median Response of Teachers	Median Response of Parents	Overall Median	Verbal Interpretation
1.Our school creates mechanisms to determine the needs necessary in implementing and sustaining inclusive education for learners with disabilities based on our school's context.	4.50	4.00	4.00	4.00	**HLI**
2.Our school creates a community that has a positive attitude or acceptance toward inclusive education for LSENs.	4.00	4.00	4.00	4.00	**HLI**
3.Our school ensures that the basic materials like learning resources that are developed and utilized by teachers in implementing inclusive education for LSENS correspond with the goals and objectives of our school for the program.	4.00	4.00	4.00	4.00	**HLI**
4.Guidelines and policies are explained to the teachers and staff to avoid certain levels of mistake in implementing inclusive education for LWDs.	4.00	4.00	4.00	4.00	**HLI**
5.Our school ensures to provide the teachers and staff knowledge along with the implementation of inclusive education for learners with disabilities or special educational needs.	4.00	4.00	4.00	4.00	**HLI**
Overall Median	4.00	4.00	4.00	4.00	**HLI**

1.00 - 1.50 Very Low Level of Implementation (VLLI)
1.51 - 2.50 Low Level of Implementation (LLI)
2.51 – 3.50 Moderate Level of Implementation (MLI)
3.51 – 4.50 High Level of Implementation (HLI)
4.51 – 5.00 Very High Level of Implementation (VHLI)

In terms of customer focus, Table 2 details the evaluation of the TQM of inclusive education implementation in public senior high schools in Rizal by the administrators, teachers, and parents.

Each of the five indicators received an identical median response of 4.00, indicating a substantial degree of customer-centric implementation. Furthermore, with identical median scores of 4.00, the administrators, teachers, and parents all demonstrated a substantial degree of implementation. This demonstrates that the schools have successfully implemented inclusive education by attending to the requirements of the students; thus, it substantiated the schools' compliance with TQM and DO 44, s. 2021. It suggests that educational institutions placed equal emphasis on customer satisfaction and program implementation.

Thus, the administrators, teachers, and parents noted that the inclusive education implementers had a profound understanding of the school's mission (Bagrova, et al., 2020) and had effectively prioritized the needs of the students. This is supported by the findings of Muega's (2016) study, in which the methodologies utilized by inclusive education participants were determined by the academic requirements of their pupils. However, this finding contradicts the research conducted by Al Qahtani, et al. (2015), which demonstrated that certain organizations neglected to prioritize the needs of their customers.

Assessment of School Administrators, Teachers, and Parents from Public Senior High Schools in the Division of Rizal on Inclusive Education Implementation in Terms of Process Management

Process Management is about ceasing reliance on mass inspection by school leaders, for quality assurance. It can be eliminated by incorporating quality into the product from the start.

Table 3
Respondents' Assessment of TQM of Inclusive Education Implementation in Terms of Process Management

Process Management	Median Response of Administrators	Median Response of Teachers	Median Response of Parents	Overall Median	Verbal Interpretation
1.Our school makes use of a tool or instrument that is used to plan and take actions about the limitations and challenges in terms of the quality of implementation of inclusive education for LSENs.	4.00	4.00	4.00	4.00	**HLI**
2.Our school has established a system of communication in a way of discussion which helps us understand the context and process of achieving quality in implementing inclusive education for LWDs.	4.00	4.00	4.00	4.00	**HLI**
3.Our school identifies current and long-term issues pertaining to the implementation of inclusive education for LSENs to support each member of the school and understand their challenges.	4.00	4.00	4.00	4.00	**HLI**
4.Our school creates and sustains quality that is considered a process of implementing inclusive education for LWDs by continuous improvement of school guidelines for clarity and ease.	4.00	4.00	4.00	4.00	**HLI**
5. Our school is determined to perform corrective actions to ensure quality and continuous improvement in the implementation of inclusive education for LSENs.	4.00	4.00	4.00	4.00	**HLI**

Overall Median	4.00	4.00	4.00	4.00	**HLI**

1.00 - 1.50 Very Low Level of Implementation (VLLI)
1.51 - 2.50 Low Level of Implementation (LLI)
2.51 – 3.50 Moderate Level of Implementation (MLI)
3.51 – 4.50 High Level of Implementation (HLI)
4.51 – 5.00 Very High Level of Implementation (VHLI)

In terms of process management, Table 3 details the evaluation of the TQM of inclusive education implementation by the administrators, teachers, and parents in the public senior high schools in Rizal.

All indicators, including the following: utilizing a tool or instrument to strategize and execute actions regarding the constraints and difficulties associated with the quality of inclusive education implementation for children with special educational needs and disabilities (LSEN); establishing a communication system that facilitates dialogue to comprehend the context and procedure for attaining quality in inclusive education implementation for individuals with disabilities; and identifying present and future concerns related to the implementation of inclusive education for LWDs received a median score of 4.00. Furthermore, with an equal median score of 4.00, the administrators, teachers, and parents all expressed the belief that inclusive education for students with disabilities was effectively implemented.

Moreover, this implies that the parents themselves perceived a considerable degree of execution with regard to process management; the administrators and the teachers, on the other hand, might harbor skepticism or uncertainty regarding their own performance in regard to the process management of inclusive education for LSENs (Muega, 2016). However, this result is superior to that of Al-Qahtani, et al. (2015), which revealed that some organizations had inadequate process management-based quality control implementation. Furthermore, this suggests that, similar to other establishments, there are prospects for enhancing the implementation process (Bagrova et al., 2021). With this in mind, educational institutions can strive for a certain degree of inclusive education implementation for LSENs by consistently enhancing their services.

Assessment of School Administrators, Teachers, and Parents from Public Senior High Schools in the Division of Rizal on Inclusive Education Implementation in Terms of Instituting Training on the Job

Instituting training on the job highlights the value of employee training, including how it boosts output and gives teachers the chance to grow their knowledge and abilities so they can collaborate more effectively.

Table 4
Respondents' Assessment of TQM of Inclusive Education Implementation in Terms of Instituting Training on the Job

Instituting Training on the Job	Median Response of Administrators	Median Response of Teachers	Median Response of Parents	Overall Median	Verbal Interpretation
1.Our school capacitates teachers through trainings about inclusive education for LSENs or LWDs to allow us to understand instructions before being exposed to implementing inclusive education.	4.00	4.00	4.00	4.00	**HLI**
2.Our school facilitates teachers' skills renewal, increases professionalism, and increases employee commitment and satisfaction to the organization in terms of implementing inclusive education for LWDs and LSENs.	4.00	4.00	4.00	4.00	**HLI**
3.Our school conducts teacher induction programs, INSETs, LAC sessions, conferences, and community engagement to enhance our capacity and productivity to implement inclusive education for LWDs.	4.00	4.00	4.00	4.00	**HLI**
4.Our school provides the teachers with opportunities to engage in more efficient teamwork and learn from colleagues through trainings on inclusive education for LSENs.	4.00	4.00	4.00	4.00	**HLI**
5.Our school encourages teachers to recognize gaps and variations when it comes to implementing Inclusive education for LWDs.	4.00	4.00	4.00	4.00	**HLI**
Overall Median	**4.00**	**4.00**	**4.00**	**4.00**	**HLI**

1.00 - 1.50 Very Low Level of Implementation (VLLI)
1.51 - 2.50 Low Level of Implementation (LLI)
2.51 – 3.50 Moderate Level of Implementation (MLI)
3.51 – 4.50 High Level of Implementation (HLI)
4.51 – 5.00 Very High Level of Implementation (VHLI)

In terms of instituting on-the-job training, Table 4 details the evaluation of the TQM of inclusive education implementation by the administrators, teachers, and parents in the public senior high schools in Rizal.

The median response for each indicator was 4.00, which is interpreted verbally as a significant level of implementation. Despite the finding indicating progress in program implementation through the incorporation of on-the-job training, it remains a favorable assessment in comparison to the research conducted by Masongsong, et al. (2023), which identified a comparatively inadequate level of training among a subset of teachers in a specific Philippine province and suggested that their efficacy might stem from innate abilities and pre-existing knowledge rather than formal education.

Furthermore, the outcome suggests that there is scope for enhancement in order to achieve an exceptionally high standard of program implementation with regard to on-

the-job training. This assertion is corroborated by the research conducted by Mo, et al. (2022), which found that the training specifically tailored for employees was the primary determinant in shaping their perception of performance. Training facilitates instructors' comprehension of instructions prior to their practical implementation, and it influences their efficiency, culminating in increased job satisfaction (Dziuba, et al., 2020).

Therefore, quality management training plays a pivotal role in fostering employee engagement in the process (Mo, et al., 2022); this is due to the belief that it enhances employees' task performance capabilities (Mohammed, 2016). This is corroborated by Muega's (2016) observation that lack of training was one of the most significant obstacles to implementing inclusive education.

Assessment of School Administrators, Teachers, and Parents from Public Senior High Schools in the Division of Rizal on Inclusive Education Implementation in Terms of Instituting Leadership

Instituting leadership exemplifies the goal of school administrators in terms of supervision, which is to support improved performance. One effective way for school leaders to influence employee attitudes and behaviors—such as time theft and cynicism—is through leadership.

Table 5
Respondents' Assessment of TQM of Inclusive Education Implementation in Terms of Instituting Training on the Job

Instituting Leadership	Median Response of Administrators	Median Response of Teachers	Median Response of Parents	Overall Median	Verbal Interpretation
1. The school leader displays a kind of leadership that helps me reach my full potential and not just focus on deadlines and measures when it comes to implementing inclusive education for LWDs or LSENs.	4.00	4.00	4.00	4.00	**HLI**
1. The school leader displays a kind of leadership performing instructional supervision and management of learning delivery in inclusive education for LWDs.	4.00	4.00	4.00	4.00	**HLI**
2. The school leader allows teachers to be empowered toward implementing inclusive education for LSENs.	4.00	4.00	4.00	4.00	**HLI**
3. The school leader has worked on sources of improvement and the process of quality services in implementing inclusive education for LWDs.	4.00	4.00	4.00	4.00	**HLI**
4. The school leader provides teachers with an inspiring vision, strategic directions, and values that guide them in implementing inclusive education for LWDs.	4.00	4.00	4.00	4.00	**HLI**
Overall Median	4.00	4.00	4.00	4.00	**HLI**

1.00 - 1.50 Very Low Level of Implementation (VLLI)
1.51 - 2.50 Low Level of Implementation (LLI)
2.51 – 3.50 Moderate Level of Implementation (MLI)

3.51 – 4.50 High Level of Implementation (HLI)
4.51 – 5.00 Very High Level of Implementation (VHLI)

Table 5 displays the administrators', teachers', and parents' evaluation of the TQM of inclusive education implementation in the public senior high schools in Rizal with regard instituting leadership.

The median response for all indicators was 4.00, which corresponds to a high level of implementation as determined by its verbal interpretation. Furthermore, the median responses of all three groups demonstrate a substantial degree of implementation. This suggests that, in order to achieve a higher level of implementation, the schools' process of inclusive education for students with special educational needs could be enhanced in the area of leadership.

At the end, administrators may seek to engage and empower faculty and staff; since empowered personnel report greater job contentment and productivity (Davidescu, et al., 2020), this could generate a favorable reaction to the program's implementation.

Assessment of School Administrators, Teachers, and Parents from Public Senior High Schools in the Division of Rizal on Inclusive Education Implementation in Terms of Driving-Out Fear

Driving-Out Fear promotes better communication and other strategies to eradicate fear across the organization, which is essential for everyone to operate more efficiently and successfully for the business.

Table 6
Respondents' Assessment of TQM of Inclusive Education Implementation in Terms of Driving-Out Fear

Driving- Out Fear	Median Response of Administrators	Median Response of Teachers	Median Response of Parents	Overall Median	Verbal Interpretation
1. Our school encourages teachers to engage in a two-way communication and other means, to express ideas and ask questions without fear or hesitation in implementing inclusive education for learners with disabilities or special educational needs.	5.00	4.00	4.00	4.00	**HLI**
2. Our school doesn't make us feel intimidated when we are being corrected.	5.00	4.00	4.00	4.00	**HLI**
3. Our school motivates teachers to not dwell on fear about new knowledge, and embrace quality in implementing inclusive education for LWDs.	5.00	4.00	4.00	4.00	**HLI**
4. Our school helps teachers develop cooperation, teamwork, and constant improvement to serve the best interest of the school in implementing inclusive education for LSENs.	5.00	4.00	4.00	4.00	**HLI**

5. Our school helps teachers to not fear committing mistake and asking questions to understand better the reasons of such process in implementation of inclusive education for LWDs.	5.00	4.00	4.00	4.00	**HLI**
Overall Median	5.00	4.00	4.00	4.00	**HLI**

1.00 - 1.50 Very Low Level of Implementation (VLLI)
1.51 - 2.50 Low Level of Implementation (LLI)
2.51 – 3.50 Moderate Level of Implementation (MLI)
3.51 – 4.50 High Level of Implementation (HLI)
4.51 – 5.00 Very High Level of Implementation (VHLI)

In terms of driving-out fear, Table 7 details the evaluation of the TQM of inclusive education implementation by the administrators, teachers, and parents in the public senior high schools in Rizal.

All indicators (promoting active teacher participation in two-way communication and other avenues, encouraging fearless expression of ideas and inquiry, and fostering an environment where teachers feel comfortable seeking corrections) contribute to the following: facilitating inclusive education for learners with disabilities or special educational needs; encouraging teachers to embrace quality rather than fixate on apprehension regarding new information; assisting teachers in developing cooperative skills.

Furthermore, the administrators obtained the highest median score of 5.00, indicating a very high level of implementation, among the three categories. Teachers and parents, on the other hand, received a median score of 4.00, indicating a high level of implementation. This suggests that the responses of educators and guardians were comparatively less fear-inducing than the evaluation of implementation by the administrators. This underscores the necessity of identifying the origin of the instructors' apprehension prior to implementing inclusive education programs.

This may be the result of external factors including inadequate managerial competencies, insufficient knowledge and skills regarding change implementation, communication deficiencies, insufficient employee team building, and insufficient work organization or empowerment (Bugdol, 2020). In this regard, Zaman, et al. (2016) suggest that open communication may facilitate TQM in the education sector.

Assessment of School Administrators, Teachers, and Parents from Public Senior High Schools in the Division of Rizal on Inclusive Education Implementation in Terms of Eliminating Management by Objectives

Eliminating Management by Objectives can be achieved by doing away with arbitrary numerical targets and placing an emphasis on quality rather than quantity.

Table 7
Respondents' Assessment of TQM of Inclusive Education Implementation in Terms of Eliminating Management by Objectives

Eliminating Management by Objectives	Median Response of Administrators	Median Response of Teachers	Median Response of Parents	Overall Median	Verbal Interpretation
1. Our school performs monitoring and evaluation of the process of implementation of inclusive education for LWDs to identify how to serve better the learners for continuous improvement.	5.00	4.00	4.00	4.00	**HLI**
2. Our school utilizes an evaluation system to determine personnel that needs special help or attention when it comes to implementing inclusive education for LWDs.	4.50	4.00	4.00	4.00	**HLI**
3. Our school uses a Client Satisfaction Survey or Tools to measure the school's processes toward inclusive education.	4.00	4.00	4.00	4.00	**HLI**
4. Our school's processes included in the implementation of inclusive education for LSENs are posted through their respective websites or in the form of published materials such as handbooks written either in English or Filipino or in the local dialect.	4.50	4.00	5.00	4.00	**HLI**
5. Our school has a strong and fair reward system in order to motivate the teachers to implement inclusive education for LWDs.	4.50	4.00	5.00	4.00	**HLI**
Overall Median	5.00	4.00	4.00	4.00	**HLI**

1.00 - 1.50 Very Low Level of Implementation (VLLI)
1.51 - 2.50 Low Level of Implementation (LLI)
2.51 – 3.50 Moderate Level of Implementation (MLI)
3.51 – 4.50 High Level of Implementation (HLI)
4.51 – 5.00 Very High Level of Implementation (VHLI)

In terms of eliminating management by objectives, Table 8 details the evaluation of the TQM of inclusive education implementation in the public senior high schools in Rizal by the administrators, teachers, and parents.

The median response for each indicator is 4.00, indicating a high level of implementation. In comparison to the other two categories, the administrators received the highest median response of 5.00, signifying an exceptionally high degree of implementation. Conversely, the teachers and the parents obtained a median response of 4.00, signifying a high degree of implementation.

However, the median response from the parents for indicators four and five was 5.00. This result indicates that the median response of teachers regarding the elimination of management by objectives was lower than the median response of administrators regarding implementation. This indicates that the administrators may be deficient in TQM practices pertaining to the elimination of management by objectives in inclusive education implementation. This is comparable to the findings of Rahmi, et al. (2021), who discovered that certain educational institutions had not been adequately monitored and evaluated during the implementation of inclusive education, a crucial step toward ensuring ongoing progress.

Assessment of School Administrators, Teachers, and Parents from Public Senior High Schools in the Division of Rizal on Inclusive Education Implementation in Terms of Removing Barriers to Pride in Workmanship

Removing Barriers to Pride in Workmanship is about maintaining performance through the development of school administrators and teachers; and removing barriers to attain pride in workmanship and job- satisfaction.

Table 8
Respondents' Assessment of TQM of Inclusive Education Implementation in Terms of Removing Barriers to Pride in Workmanship

Removing Barriers to Pride in Workmanship	Median Response of Administrators	Median Response of Teachers	Median Response of Parents	Overall Median	Verbal Interpretation
1. Every teacher in our school is considered a unique and valuable part of the human resource implementing inclusive education for LWDs.	5.00	4.00	5.00	4.00	**HLI**
2. Our school measures the performance of each committee/department in implementing inclusive education for LSENs, giving importance for general as a whole rather than generating individual performance of teachers.	5.00	4.00	5.00	4.00	**HLI**
3. My skills are built to make me more adaptable to change, do a good job and improvements, and take a pride of my work in implementing inclusive education for LWDs.	5.00	4.00	4.00	4.00	**HLI**
4. Our school has an established system's code of ethics that outlines guidelines on inclusive education for LSENs, that all teachers adhere to in the performance of their work	5.00	4.00	4.00	4.00	**HLI**
5. Our school helps teachers to have a feeling of satisfaction in implementing inclusive education for LWDs.	4.50	4.00	4.00	4.00	**HLI**
Overall Median	5.00	4.00	4.00	4.00	**HLI**

1.00 - 1.50 Very Low Level of Implementation (VLLI)
1.51 - 2.50 Low Level of Implementation (LLI)
2.51 – 3.50 Moderate Level of Implementation (MLI)
3.51 – 4.50 High Level of Implementation (HLI)

4.51 – 5.00 Very High Level of Implementation (VHLI)

In terms of removing obstacles to workmanship pride, Table 8 details the evaluation of the TQM of inclusive education implementation by the administrators, teachers, and parents in the public senior high schools in Rizal.

With a median score of 4.00, all indicators are verbally interpreted as indicating a high level of implementation. This finding contradicts the results of Avila's (2018) study, which indicated only a moderate level of TQM practice, which may impede the successful implementation of inclusive education.

The administrators achieved a median score of 5.00, that signify an exceptionally high degree of implementation. In contrast, the instructors and the parents scored a median of 4.00, which can only be interpreted verbally as a high degree of implementation. In contrast, the median response from parents for indicators 1 and 2 was 5.00, which is interpreted verbally as a "very high level of implementation." These results indicate that the median response of the educators regarding the elimination of obstacles to pride in workmanship was lower than the response of the administrators regarding implementation. This suggests that the administrators implementing inclusive education may be deficient in TQM practices for eradicating obstacles to pride in workmanship.

It is critical to bear in mind that the development and implementation of TQM necessitate additional exertion and may face obstacles. In order to enhance comprehension of the TQM concept, it is imperative to acknowledge the obstacles that impede the implementation of TQM within organizations (Alghamdi, 2016). Obstacles to the implementation of TQM, according to Dr. Deming (2018), include a lack of purpose consistency, short-term thinking, annual performance reviews that fail to account for employee development, job-hopping due to attrition concerns, and the reliance on visible metrics.

Assessment of School Administrators, Teachers, and Parents from Public Senior High Schools in the Division of Rizal on Inclusive Education Implementation in Terms of Implementing Education and Self-Improvement

Implementing Education and Self-Improvement involves the notion that management must encourage continuous learning and education in order for businesses to stay ahead of their rivals.

Table 9
Respondents' Assessment of TQM of Inclusive Education Implementation in Terms of Implementing Education and Self-Improvement

Implementing Education and Self-Improvement	Median Response of Administrators	Median Response of Teachers	Median Response of Parents	Overall Median	Verbal Interpretation
1. The school utilizes the Individual Education Plan and individual transition	5.00	4.00	4.00	4.00	**HLI**

plan as bases for monitoring the progress of evaluation of learners with disabilities to unlock the full potential of students as a modern management strategy.					
2. The school ensures that data on LWDs are updated, correct, and properly encoded in the LIS and uses school data in planning for and allocating resources for the school	5.00	4.00	5.00	4.00	**HLI**
3. The school provides learners with disabilities with different delivery modalities or options; thus, instructional delivery shall be based on the residential distance from the school, family structure, health condition, and/or other factors to be determined by the school officials.	5.00	4.00	4.50	4.00	**HLI**
4. Our school establishes a clear referral system with partners that promote collaborative management of resources and provisions of appropriate support and interventions for LWDs and Generate support for learners' health, medical, and overall welfare.	4.00	4.00	4.00	4.00	**HLI**
5. Our school strengthens the practice of giving formative assessments; providing modifications and adaptations, contextualization in the curriculum; and giving summative assessments to LWDs.	4.00	4.00	4.00	4.00	**HLI**
Overall Median	5.00	4.00	4.00	4.00	**HLI**

1.00 - 1.50 Very Low Level of Implementation (VLLI);
1.51 - 2.50 Low Level of Implementation (LLI)
2.51 – 3.50 Moderate Level of Implementation (MLI)
3.51 – 4.50 High Level of Implementation (HLI)
4.51 – 5.00 Very High Level of Implementation (VHLI)

The evaluation of the quality of inclusive education implementation by the administrators, instructors, and parents in the public senior high schools in Rizal with regard to self-improvement and education implementation is detailed in Table 9.

The verbal interpretation of all indicators reaching a median of 4.00 indicates a high level of implementation. The administrators achieved a median score of 5.00, signifying an exceptionally high degree of implementation, among the three categories. In contrast, the teachers and the parents obtained a median score of 4.00, which can only be interpreted verbally as a high degree of implementation. However, the median responses of the parents regarding indicators 2 (ensuring that data on learning disabilities are accurate, current, and appropriately encoded in the Learning Information System and utilizing school data for resource allocation and planning) and 3 (offering diverse instructional delivery modalities or alternatives for learners with disabilities; thus, instructional delivery shall be determined by factors such as family structure, health condition, residential distance from the school, and other such determinants as determined by the school).

This result indicates that the educators perceived a deficiency in their ability to implement this principle, indicating that they would benefit from more intensive seminars

and training regarding inclusive education. This is corroborated by the research conducted by Allam and Martin (2021), which revealed that certain educators instructing LWDs lacked training and believed themselves unqualified to instruct LSENs.

The identical results were reported in Ecoben's (2016) study, which indicated that teachers, despite possessing personal expertise, still required a range of current special education seminars, workshops, and training to effectively manage the behavior of their students and impart effective teaching strategies to their mainstream counterparts.

Assessment of School Administrators, Teachers, and Parents from Public Senior High Schools in the Division of Rizal on Inclusive Education Implementation in Terms of Making Transformation a Job for Everyone at Work

Making Transformation a Job for Everyone at Work relates to the goal of the school administration to develop a thorough action plan for high-quality assignments. This is a thorough message for any firm looking to ensure quality.

Table 10
Respondents' Assessment of TQM of Inclusive Education Implementation in Terms of Making Transformation a Job for Everyone at Work

Making Transformation a Job for Everyone at Work	Median Response of Administrators	Median Response of Teachers	Median Response of Parents	Overall Median	Verbal Interpretation
1. Our school assesses learners with disabilities not only to clearly establish the goals for their learning and development areas but also to continually monitor their progress in all domains of development (cognitive, socio-emotional, physical, motor, and moral-spiritual domains).	5.00	4.00	4.00	4.00	**HLI**
2. Our school offers Resource Room Services intended for specific instructional interventions and other related services outside of general education classrooms; tutorial and remedial sessions for LWDs; and assessment services for LWDs educational placement and referrals.	5.00	4.00	4.50	4.00	**HLI**
3. Our school utilizes school data in planning and allocating resources for the school implementation of inclusive education for LSENs.	4.50	4.00	4.00	4.00	**HLI**
4. Our school establishes and sustains strong partnerships with families, government agencies, local government units, non-government organizations, and medical and allied medical institutions by coordinating with them and ensuring that learners and families are informed of the implementation of inclusive education for LWDs.	4.00	4.00	4.00	4.00	**HLI**
5. Our school applies approaches to transform people and culture within our organization to achieve effective implementation of inclusive education for LWDs.	4.00	4.00	4.00	4.00	**HLI**
Overall Median	4.50	4.00	4.00	4.00	**HLI**

1.00 - 1.50 Very Low Level of Implementation (VLLI);
1.51 - 2.50 Low Level of Implementation (LLI)
2.51 – 3.50 Moderate Level of Implementation (MLI)

3.51 – 4.50 High Level of Implementation (HLI)
4.51 – 5.00 Very High Level of Implementation (VHLI)

The evaluation of the quality of inclusive education implementation by the administrators, teachers, and parents in the public senior high schools in Rizal with regard to transforming the work environment for all is detailed in Table 10.

The verbal interpretation of all five indicators yielded a median score of 4.00, indicating a significant degree of implementation. In contrast, the administrators obtained a median response of 5.00, indicating a very high level of implementation, for indicators 1 and 2. Indicator 1 requires administrators to assess learners with disabilities in order to establish clear goals for their learning and development areas and to continuously monitor their progress across all domains of development; Indicator 2 pertains to the provision of Resource Room Services, which are designed to facilitate specific instructional interventions and other related services beyond the confines of general education classrooms. The median response from parents was 4.50, indicating a high level of implementation for indicator 2.

The administrators received the highest median response of 4.50, indicating a high level of implementation based on verbal interpretation, among the three categories. Teachers and parents, on the other hand, only received a median response of 4.00, which also indicates a high level of implementation.

The findings highlight the necessity to examine potential efficacious strategies and exemplary practices, such as those delineated by Pajarillo (2019), which involve input from administrators, teachers, and parents. In order to enhance the standard of inclusive education implementation for students with special educational needs, it is imperative that this transformation becomes a collective responsibility within the workplace.

Test of Significant Difference in the Assessment of TQM of Inclusive Education Implementation Among the Respondents

The effective implementation of an inclusive education program—which aims to ensure quality, relevance, and responsive special education—requires the active participation of families and strong support from various administrative positions and stakeholders. Testing the significant difference of the responses of school administrators, teachers, and parents, based on such parameters would provide findings and conclusions on the principles that needs to be improved.

Table 11
Kruskal Wallis H- Test: Difference in the Assessment of TQM of Inclusive Education Implementation Among the Respondents

Principle	Group	Mean Rank	K-	P-value	Decision	Remarks
1. Commitment of Top- Management	Administrators	81.00	0.176	0.916	Failed to Reject Ho	Difference is not significant
	Teachers	75.84				
	Parents	77.80				

2. Customer- Focus	Administrators	70.63	3.531	0.171	Failed to Reject Ho	Difference is not significant
	Teachers	73.86				
	Parents	88.12				
3. Process Management	Administrators	90.94	4.467	0.107	Failed to Reject Ho	Difference is not significant
	Teachers	72.84				
	Parents	86.57				
4. Instituting Training on the Job	Administrators	78.13	1.409	0.494	Failed to Reject Ho	Difference is not significant
	Teachers	74.44				
	Parents	83.90				
5. Instituting Leadership	Administrators	81.00	0.129	0.937	Failed to Reject Ho	Difference is not significant
	Teachers	76.01				
	Parents	77.17				
6. Driving- Out Fear	Administrators	102.00	4.193	0.123	Failed to Reject Ho	Difference is not significant
	Teachers	73.68				
	Parents	80.43				
7. Eliminating Management by Objectives	Administrators	104.00	5.572	0.062	Failed to Reject Ho	Difference is not significant
	Teachers	72.76				
	Parents	83.37				
8. Removing Barriers to Pride in Workmanship	Administrators	102.13	6.623	0.036	Reject Ho	Difference is significant
	Teachers	72.05				
	Parents	86.58				
9. Implementing Education and Self-Improvement	Administrators	103.88	7.841	0.020	Reject Ho	Difference is significant
	Teachers	71.79				
	Parents	87.08				
10.Making Transformation a Job for Everyone at Work	Administrators	95.50	4.490	0.106	Failed to Reject Ho	Difference is not significant
	Teachers	72.82				
	Parents	85.40				

If p value is less than or equal to the level of significance (0.05) reject Ho, otherwise failed to reject Ho.

The table shows the difference in the assessment of the administrators, teachers, and parents about TQM of inclusive education implementation in terms of its principles.

In the first principle, the administrators got the highest mean rank of 81.00; followed by the parents at 77.80; and the teachers at 75.84. The observation of responses in the group of administrators tends to be higher than those of the teachers and the parents. With the K-statistic of 0.716, the computed p-value is 0.916; the researcher failed to reject the null hypothesis. Thus, there is no significant difference in the assessments of administrators, teachers, and parents when it comes to the commitment of the top management.

In the second principle, the parents got the highest mean rank of 88.12; followed by the teachers at 73.86; and then the administrators at 70.63. This implies that the observation of responses in the group of parents tends to be higher than those of the administrators and teachers. With the K-statistic of 0.531, the computed p-value is 0.171 which is greater than the level of significance (0.05); the researcher failed to reject the null hypothesis. Thus, there is no significant difference in the assessments of the administrators, teachers, and parents when it comes to customer focus.

In the third principle, the administrators got the highest mean rank of 90.94; followed by parents at 86.57; and then teachers at 72.84. This implies that the observation of responses in the group of administrators tends to be higher than those of the teachers and parents. With the K-statistic of 4.467, the computed p-value is 0.107 which is greater than the level of significance (0.05); the researcher failed to reject the null hypothesis. Thus, there is no significant difference in the assessments of administrators, teachers, and parents when it comes to process management.

In the fourth principle, the parents got the highest mean rank of 83.90; followed by the administrators at 78.13; and then the teachers at 74.44. This implies that the observation of responses in the group of administrators tend to be higher than those of the teachers and parents. With the K-statistic of 1.409, the computed p-value is 0.494 which is greater than the level of significance (0.05); the researcher failed to reject the null hypothesis. Thus, there is no significant difference in the assessments of administrators, teachers, and parents when it comes to instituting training.

In the fifth principle, the administrators got the highest mean rank of 81.00; followed by the parents at 77.17; and then the teachers at 76.01. This implies that the observation of responses in the group of administrators tends to be higher than those of the teachers and parents. With the K-statistic of 0.129, the computed p-value is 0.937 which is greater than the level of significance (0.05); the researcher failed to reject the null hypothesis. Thus, there is no significant difference in the assessments of administrators, teachers, and parents when it comes to adopting and instituting leadership.

In the sixth principle, the administrators got the highest mean rank of 102.00; followed by the parents at 80.43; and then the teachers at 73.68. This implies that the observation of responses in the group of administrators tends to be higher than those of the teachers and parents. With the K-statistic of 4.193, the computed p-value is 0.123 which is greater than the level of significance (0.05); the researcher failed to reject the null hypothesis. Thus, there is no significant difference in the assessments of administrators, teachers, and parents when it comes to driving-out fear.

In the seventh principle, the administrators got the highest mean rank of 104.00; followed by the parents at 83.37; and then the teachers at 72.76. This implies that the observation of responses in the group of administrators tends to be higher than those of the teachers and parents. With the K-statistic of 5.572, the computed p-value is 0.062 which is greater than the level of significance (0.05); the researcher failed to reject the null hypothesis. Thus, there is no significant difference in the assessments of administrators, teachers, and parents when it comes to Eliminating Management by Objectives.

However, with the K-statistic of 6.623, the computed p-value is 0.036 which is less than the level of significance (0.05); the researcher rejected the null hypothesis. Thus, there is no significant difference on the assessments of the administrators, the teachers, and the parents when it comes to removing barriers to pride in workmanship. In addition, the administrators got the highest mean rank of 102.13; while the teachers got the lowest

mean rank of 72.05. This infers that even though the administrators rated the implementation of IE higher; the teachers' insights of implementation are lower.

It infers that the administrators may be lacking TQM practices on removing barriers to pride in workmanship in inclusive education implementation; and since the teachers are basically the implementers of IE (DO 44, s. 2021) on the ground, they understand and experience the challenges in implementing IE; especially when there were instances that the teachers were the only ones who searched ways to involve the parents in the school activities (Rahmi, et. al, 2020).

All stakeholders have a prominent role to play in an educational institution (Hoque, et. al, 2017); however, there are still principals who do not fully understand inclusive education management, provide motivation to teachers, collaborate with students with special needs, and lack of commitment in serving LWDs (Rahmi, et. al, 2020) that serve as barriers of implementing IE. It is important to remember that implementing and developing TQM requires more effort and it may encounter some barriers. To get a better understanding of the TQM concept, it is necessary to realize the barriers that stand in the way of pursuing TQM in organizations (Alghamdi, 2016).

Dr. Deming (2018) had mentioned that the barriers to TQM implementation include the lack of constancy of purpose, short-term thinking, and the assessment of employees' performance by annual review, job-hopping (e.g., turnover issues), and the use of visible figures. Acceptance of the facts and expectations are always changing, the organization must adapt and respond to those changes. That way, the strategy of TQM which concentrates on enhancing customer satisfaction levels would easily be recognized and would directly improve organizational performance. Ultimately, leadership commitment is considered a key element for guaranteeing the successful removal of barriers in the implementation of TQM practices at organizations (N. Alauddin, 2020).

Moreover, with the K-statistic of 7.841, the computed p-value is 0.020 which is less than the level of significance (0.05), the researcher rejected the null hypothesis. Thus, there was a significant difference in the assessments of the administrators, the teachers, and the parents when it comes to Implementing education and self-improvement for everyone. In the ninth principle, the administrators got the highest mean rank of 103.88; and the teachers got the lowest mean rank of 71.79. This implies that the observation of responses in the group of administrators tends to be higher than those of the teachers.

This infers that the teachers viewed the implementation in terms of education and self-improvement at a lower level than that of the administrators. Employees' performance is affected by the TQM practices imposed by the school leader (Safar, et al, 2020). It is important that the school leader communicates the activities to teachers, gives the group direction, organizes members' activities; and maintains uniformity to accomplish the goals (Ibrahim, et. al, 2019). It is highly suggested that the administrators should actively participate in the implementation of TQM for students' academic progress (Kakingo, et. al, 2021).

Additionally, teachers are basically the implementers of inclusive education in the teaching and learning context. Therefore, to effectively achieve the goal of inclusion, teachers need thorough training to have knowledge and expertise on how to properly accommodate LSN in their classes, assuage their reservations, and respond positively to specific education (Quinones, 2022).

Finally, in the tenth principle, the administrators got the highest mean rank of 95.50; followed by the parents at 85.40; and then the teachers at 72.82. This implies that the observation of responses in the group of administrators tends to be higher than those of the teachers and parents. With the K-statistic of 4.490, the computed p-value is 0.106 which is greater than the level of significance (0.05); the researcher failed to reject the null hypothesis. Thus, there is no significant difference in the assessments of the administrators, teachers, and parents when it comes to making transformation a job for everyone at work.

Given the significant differences in assessment in Principles 8 and 9, the administrators' group responses evidently had the highest mean rank, while the teachers had the lowest. Among three groups, the teachers also appeared to have the most number of indicators with only high level implementation instead of very high.

Assessment of Challenges Encountered by the School Administrators and Teachers Regarding to Inclusive Education Implementation

In order to attain a more comprehensive comprehension of the TQM concept, it is imperative to acknowledge the obstacles that impede the implementation of TQM within organizations.

Table 12
Assessment of Challenges Encountered by the School Administrators and Teachers Regarding Inclusive Education Implementation

Challenges In Regards to Inclusive Education Implementation	Median Response of Administrators	Median Response of Teachers	Overall Median	Verbal Interpretation
1. Lack of training of general education teachers on dealing with learners with disabilities and mainstreaming them.	3.00	4.00	4.00	Very Challenging
2. Lack of training in the learning process/ deliveries and contextualizing learning materials depending on the needs of learners with disabilities.	2.50	4.00	4.00	Very Challenging
3. Lack of support from higher officials	2.00	3.00	3.00	Moderately Challenging
4. Lack of support from LGUs	2.00	3.00	3.00	Moderately Challenging

5. Lack of awareness, support, and participation from parents/ guardians toward assessing learners' special education needs and mainstreaming learners with disabilities	2.50	3.00	3.00	Moderately Challenging
6. Limited interventions and services at the school level	2.50	3.00	3.00	Moderately Challenging
7. Unclear implementation down to classroom level	2.00	3.00	3.00	Moderately Challenging
8. Lack of initiatives in enhancing community awareness and relationship	2.50	3.00	3.00	Moderately Challenging
9. Lack of physical facilities and equipment	2.00	4.00	3.00	Moderately Challenging
10. Poor monitoring and evaluation process	2.00	3.00	3.00	Moderately Challenging

1.00 - 1.50 Not at All Challenging
1.51 - 2.50 Slightly Challenging
2.51 – 3.50 Moderately Challenging
3.51 – 4.50 Very Challenging
4.51 – 5.00 Extremely Challenging

The table presents an evaluation of the obstacles that school administrators and instructors in public senior high schools in the province of Rizal have encountered in implementing inclusive education.

Regarding the inadequate preparation of general education teachers to effectively support and integrate students with disabilities into mainstream settings, administrators received an average rating of 3.00, which was interpreted verbally as moderately challenging. On the other hand, teachers received a rating of 4.00, which was interpreted verbally as extremely challenging. The aggregate median score was 4, which signifies a high degree of difficulty. This result is consistent with the outcomes reported in the research conducted by Allam (2021), Ecoben (2019), Gaytos (2020), Quinones (2022), and Pedrigal (2019), which unveiled the difficulties and obstacles resulting from inadequate training in the implementation of inclusive education.

Furthermore, administrators perceived challenge number 2 as moderately difficult (median = 2.50), whereas instructors regarded it as extremely difficult (median = 4.00). In general, they perceived the implementation to be exceedingly difficult (median = 4.00) due to inadequate training in the learning process and assignments, as well as the need to contextualize learning materials to meet the requirements of students with disabilities. According to Pedrigal, et al. (2019) and Ediyanto, et al. (2021), a lack of training prevented schools from implementing curriculum modifications that were compatible with inclusive education; consequently, the learning process in the classroom did not meet the

requirements of the students in the class. Walsh (2018) nevertheless suggested that if faculty members had not yet attended training, addressing the issue of inadequate training could be accomplished through independent research and weekly brainstorming sessions with fellow members to generate new strategies.

Additionally, it is worth noting that the implementation of challenges ranging from number three to ten received a median response of three. This indicates that the lack of support from higher officials and local government units (LGUs), lack of awareness, support, and participation from parents/guardians regarding the assessment of learners' special education needs and mainstream learners with disabilities, limited interventions and services at the school level, and inadequate support from LGUs collectively constituted only moderate difficulties. Nonetheless, it was observed that administrators encountered only marginal difficulty with regard to items two through ten.

The findings suggest that there is a necessity to enhance the implementation of inclusive education for students with disabilities in order to eliminate or reduce the difficulties that arise during its operation. To achieve its objective of providing inclusive education for learner-bodied individuals (LWDs), the school requires assistance from higher authorities, including LGUs, with regard to infrastructure and facilities. This result is corroborated by Comia's (2021) study, which unveiled favorable outcomes regarding the involvement of various stakeholders in inclusive education for students with disabilities, and by Imaniah, et al. (2018), who underscored the importance of schools facilitating inclusive education having sufficient infrastructure to ensure an effective and efficient learning-oriented inclusive education for students. Furthermore, Sayson (2016) emphasized the necessity of rectifying the inadequate programs and services provided in public special education institutions for a wide range of disabilities, including those related to health. Furthermore, Toquero (2021) reached the conclusion that inclusive school policies for LWDs are essential. These challenges may be effectively tackled with the backing of higher-ranking officials.

Additionally, this suggests that parental awareness regarding inclusive education must be increased. This is supported by the findings of Gaytos, et al. (2020), which indicated that parents of children with special needs may be uninformed, unaccepted, and unwilling to participate in the program, thereby contributing to its low enrollment. Additionally, parental concerns and expectancies were identified as obstacles to the implementation of inclusive education, according to Ahamed (2021). Furthermore, Pajarillo (2019) and Comia (2021) reached the conclusion that parents played crucial roles in assisting their children in achieving their objectives.

Moreover, the lack of clarity regarding classroom-level implementation was emphasized in the research conducted by Pedrigal, et al. (2019), which concluded that school administrators must demonstrate strong leadership when attempting to implement inclusive classroom education. To ensure that learners with special needs receive quality instruction and education, a structured and methodical implementation of inclusive education must incorporate improved methods and solutions.

The study by Muega (2016) supports the notion that implementing inclusive education is complicated by the requirement for limited interventions and services, as it identified institutions where little was understood regarding the implementation of inclusion. Furthermore, Sayson (2016) disclosed that the execution of inclusive education encountered obstacles in the form of inadequate programs and services designed to meet the requirements of individuals with disabilities. According to the findings of Pedrigal et al. (2019), the school lacked sufficient resources and failed to implement curriculum adjustments that aligned with the principles of inclusive education (Ediyanto, et al., 2021).

In their presentation on the issue of inadequate monitoring of inclusive education, Gaytos et al. (2020) similarly underscored the significance of inadequate monitoring and evaluation processes. The absence of professional participation from counselors and psychologists, who played a crucial role in the referral system, exacerbated the difficulties encountered by those implementing inclusive education.

Gaytos et al. (2020) attributed the absence of efforts to improve community awareness and relations concerning special needs education to the lack of participation, acceptance, and awareness from parents of LWDs and SHS faculty members (Quinones, 2022). Conversely, a study by Pajarillo (2019) revealed that parental engagement in fostering school community relations was one of the most effective inclusive education implementation strategies employed in a school; this finding also suggests that a school administrator must demonstrate strong leadership (Pedrigal, et al., 2019). Similarly, physical facilities and apparatus were identified as one of the issues and challenges in inclusive education implementation (Allam, et al., 2021).

DISCUSSION

Based on the data gathered, the following findings were drawn:

The researcher discovered that the administrators noted that the implementation of inclusive education for learners with special educational needs was very highly implemented in terms of driving out fear, eliminating management by objectives, removing barriers to pride in workmanship, and implementing education and self-improvement. Conversely, the feedback provided by teachers and parents indicated merely a high level of implementation of all the principles. In general, the public senior high schools in Rizal demonstrated a commendable degree of execution or a high level of implementation of inclusive education for students with special educational needs, as evidenced by their adherence to all ten (10) principles of total quality management: commitment of top management, customer-focus, process management, instituting training on the job, instituting leadership, driving-out fear, elimination of management by objectives, removal

of barriers to pride in workmanship, implementation of education as a service, and making transformation a job for everyone at work.

Moreover, under commitment of top management, customer-focused, process management, implementing training on the job, implementing leadership, driving-out fear, eliminating management by objectives, and making transformation a job for everyone at work; the researcher failed to reject the null hypothesis. However, the researcher rejected the null hypothesis regarding the evaluation conducted by the three groups regarding the overall quality management of inclusive education in public senior high schools in the Division of Rizal, specifically for students with special educational needs, with regard to removing barriers to pride and workmanship and implementing education and self-improvement. It was apparent that administrators obtained the highest mean rank in accordance with the aforementioned principles (removing obstacles to pride in workmanship and implementing education and self-improvement), whereas teachers obtained the lowest mean rank.

Finally, the administrators and the teachers encountered very challenging situations in implementing inclusive education due to the general education instructors' inadequate preparation in managing students with disabilities, mainstreaming LWDs, and providing contextualized learning materials and learning processes. Nevertheless, they encountered only moderate difficulties in the following situations: absence of support from higher authorities and local government units; lack of parental/guardian awareness, support, and participation; limited intervention and services at the school level; unclear classroom-level implementation; absence of initiatives to improve community relations and awareness; lack of physical facilities and equipment; and inadequate monitoring and evaluation.

Conclusions

The public senior high schools in the Division of Rizal successfully implemented the Total Quality Management (TQM) approach to inclusive education for students with special educational needs during SY 2023-2024; with a certain high level of implementation in all the ten principles. Moreover, findings showed that there was no significant difference in the responses expressed by administrators, teachers, and parents regarding the implementation of Total Quality Management (TQM) for inclusive education for students with special educational needs in public senior high schools in the Division of Rizal. This holds true with regard to the following principles: commitment of top management, customer-focus, process management, instituting training on the job, instituting leadership, driving-out fear, elimination of management by objectives, and making transformation a job for everyone at work. Nevertheless, administrators, teachers, and parents' evaluations of the TQM of inclusive education implementation diverged significantly with regard to the removing barriers to pride in workmanship and the implementation of education and self-improvement. And finally, due to a lack of teacher training, the administrators and the teachers in the public senior high schools in the Division of Rizal found the implementation of inclusive education for students with disabilities to be very challenging. On the other hand, lack of support from higher officials

and LGUs; lack of awareness, support, and participation from parents/guardians; limited intervention and services at the school level; unclear implementation down to the classroom level; absence of initiatives to enhance community awareness and relationships; lack of physical facilities and equipment; and a lack of support from higher officials and LGUs posed only moderate challenges for administrators and teachers during implementation.

Recommendations

The researcher recommends that educational institution may prioritize the development and empowerment of teachers with respect to the implementation of inclusive education for students with special educational requirements. Also, teachers, parents, and the entire school community may be involved in planning for inclusive education for learners with special educational needs - enhancing practices to remove barriers to pride in workmanship and implement education and self-improvement. Moreover, subsequent researchers may investigate the characteristics of participants, deficiencies, and determinants that influenced the reactions of administrators, educators, and guardians regarding the implementation of inclusive education. Lastly, future researchers may conduct research on the similar topic covering other locale. They may also conduct studies on TQM in other field of specialization.

Compliance with Ethical Standards

The researcher ensured that all research protocols involving ethics in research were complied with for the protection of all people and institutions involved in the conduct of the study. The researcher seek approval from the University's Ethics Committee prior the conduct of data gathering.

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UNRAVELLING THE ACCEPTABILITY AND DIFFICULTY OF THE SCIENCE TECHNOLOGY ENGINEERING AND MATHEMATICS STUDENTS IN LAMBAYONG NATIONAL HIGH SCHOOL

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ABSTRACT

An abundant number of cases caught society's attention when college students who graduated in the STEM (science, technology, engineering, and mathematics) strands started choosing a non-STEM field as their major when they enrolled in college. The study aimed to explore and gain an in-depth understanding of the unraveling the acceptability and difficulty of the science technology engineering and mathematics students in Lambayong National High School. This research used qualitative research which is a research approach that allows the researcher to interpret the life of people to understand their problems better and deeper to generate solutions that are relevant to their situations. The participants of the study are 11 senior high school STEM students in Lambayong National High School for the school year 2022-2023. A semi-structured guide survey questionnaire was used to collect the necessary information and responses from the participants of the study. Thematic analysis was used to process the responses of the participants. On the aspiration of students enrolling in the STEM track the following themes were generated upon the analysis of the responses such as Nurture Knowledge and a lot of opportunities. On the challenges faced by STEM students regarding subject lessons, projects, and requirements submitted the following themes that were generated based on the responses of the student participants, Loaded with requirements and complex scientific concepts. Interestingly, the generated theme from the student participants was Time management.

Keywords: *STEM, Acceptability, Difficulty, Lambayong, Philippines*

INTRODUCTION

Quality education is the heart of sustainable development and a powerful catalyst for developing more just, humane, and equitable societies Department of Education (Philippines) (2016).

Quality education has become critical in many countries that are expanding enrolments rapidly to achieve Education for All, UNESCO (United Nations Educational, Scientific and Cultural Organization) (2017).

The Science, Technology, Engineering, and Mathematics (STEM) track of the Philippine K to 12- Enhanced Basic Education Curriculum is designed to produce graduates of secondary level who will take science, research, mathematics, and engineering-related courses in tertiary level and thereby add to the scientific and scholarly workforce of the country, DepEd (2014). It can be noted that Magno, (2010) said that a curriculum that is purposely designed for mathematics and science-inclined students could be the answer to a decade-long problem of a low number of mathematics and science practitioners in the country.

Republic Act 10533 otherwise known as the Enhanced Basic Education Act of 2013 mandates the Department of Education to create another level of basic education composed of two years. These two additional years in the secondary level shall comprise the senior high school program as set by the aforementioned law.

The primary goal of the program is to prepare secondary students to master the prerequisite skills needed in professional courses for those who prefer academic tracks and to equip them with employment and industrial skills needed for those who prefer technical-vocational and other tracks. Braza, 2014, mentioned that the new curriculum was the response of the government to the call of educators for the standardization of the country's educational system to comply with international standards.

Nevertheless, in the early stages of the implementation of the K to 12 curriculum, several oppositions to the program arose. This prompted the researchers to study the acceptability and difficulty of Science Technology Engineering and Mathematics among students at Lambayong National High School. Since there are students who want to shift from STEM to another academic strand.

Research Questions

The study focuses on the experiences, challenges, and coping mechanisms of STEM students in Lambayong National High School.

Specifically, the study sought to carried out with the following objectives;

1. What is the aspiration of students in enrolling in STEM track.

2. What are the challenges faced by STEM students regarding subject lessons, projects, and requirements submitted?
3. Narrate their coping mechanism to address those challenges they experienced.
4. What school program may be crafted based on the result of the study?

METHODOLOGY

This investigation employed a phenomenological research design as it can study people's experiences, how people construct meaning in their lives, and commonalities that transverse individuals experiencing a specific phenomenon (Edmonds & Kennedy, 2017). Notably, this study utilized Transcendental phenomenology, which aimed to seek understanding in human experience, which is performed by laying aside prepossessed ideas to view the phenomena to be investigated through a new lens, allowing it to immerge, giving its distinct meaning and form.

The focus participants of this study are ten (10) STEM senior high students who were selected through purposive sampling. This phenomenological study selected participants that fit the suggestion of Creswell (2014) as an ample number of participants to generate meaningful themes and valuable interpretations.

RESULTS

On the perceived freezing issues faced by senior high schools in Lambayong Municipality in offering the STEM strand. The following themes were Lack of facilities and equipment and lack of competent and qualified teachers.

On the issues and concerns of secondary schools on the offering of Science Technology, Engineering, and Mathematics Strand, the themes generated Human resources and equipment

Interestingly, On the possible plans of the school in offering Science Technology, Engineering, and Mathematics Strand following themes were Improve school facilities and capacitate teachers.

DISCUSSION

On the aspiration of students enrolling in the STEM track the following themes were generated upon the analysis of the responses such **as a. Nurture Knowledge and b. a lot of opportunities.**

The first theme that was generated was **nurture knowledge.** Students believed that they would be one step higher with other academic tracks. In terms of their aspiration why they tend to enroll STEM track in senior high school because they believe that they

will nurture their knowledge in the subjects offered in STEM classes, as the participants share their aspirations as follows;

> *"I choose STEM because It is related to the course that I want, getting this strand will nurture my knowledge more. Choosing this will improve and will make my understanding broader which will help me in getting the course that I want".* ***Participant 1, Male;***
>
> *"I chose the STEM track because it is related to the course that I want to take in college. I hope STEM can help me expand my knowledge, to easily understand everything that I need in the field that I want to take someday".* ***PARTICIPANT 5, Female;***
>
> *"I chose the academic track STEM because I want to take a medicine course in college. This would be a good preparation to nurture my knowledge in Science".* ***PARTICIPANT 9, Male;***

The second theme that was generated was, **a lot of opportunities** as STEM believes that taking up the STEM strand has a lot of opportunities in the future.

In response to numerous calls for more rigorous STEM (science, technology, engineering, and mathematics) education to improve US competitiveness and the job prospects of next-generation workers, especially those from low-income and minority groups, a growing number of schools emphasized.

As STEM as the student participants share their thoughts as;

> *"I chose the STEM strand because there are a lot of opportunities in this strand like scholarships, etc. and I want to improve myself more in mathematics".* ***PARTICIPANT 3, Male;***
>
> *"I chose the STEM strand because they say that, it has many opportunities in the future, and one of the goals is to be a successful person in the future".* ***PARTICIPANT 4, Male****;*
>
> Lastly student shared; *"I am motivated to choose the STEM track by my family and friends. My aspiration and goal through my enrolment in this field is to learn and be ready for my college journey and also to be on the honors list for my parents to be proud of me".* ***PARTICIPANT 8, Male***

The result of the analysis is in line with the global context where education is recognized as, a basic human right and the foundation on which to build peace and drive sustainable development (the United Nations Educational Social and Cultural Organization (UNESCO) may be regarded as important work. We live in times 'characterized by a new explosion of scientific knowledge' and Science, Technology, Engineering, and Mathematics (STEM) education is considered an important factor for strong economic and social futures (Organization for Education Co-operation and Development (OECD), United Nations Educational Social and Cultural Organization (UNESCO). STEM learning can promote important possibilities for building knowledge across disciplines and incorporates.

On the challenges faced by STEM students regarding subject lessons, projects, and requirements submitted

Science, Technology, Engineering, and Mathematics, abbreviated as STEM, is a promising field with increasing popularity due to its benefits in the modern world of globalization and modernization. Science and mathematics are the basics of the technological developments going on in the world. Thus, the children should be motivated to learn STEM from early school days. The minds of small kids are like a sponge, and they can grasp everything quickly. STEM education should be encouraged from childhood so that children like it and continue with it for higher education Ampartzaki, M., Kalogiannakis, M., & Papadakis, S. (2021).

On the challenges faced by STEM students regarding subject lessons, projects, and requirements submitted the following themes that were generated based on the responses of the student participants **a. Loaded with requirements and b. complex scientific concepts**

The first theme that was generated was **loaded with requirements**
Students as mandated to pass their requirements as one of the criteria to solve their grades, but it was noted that reading and analyzing their responses loaded with requirements was once the challenges they faced.

As the student participants shared their experiences on the challenges they faced as;

> *"Loaded requirements. The most common difficulty that I find is in solving math equations".* ***Participant 1, Male;***
>
> *"I think the hurdles or difficulties that STEM students experience is navigating through mathematical problem-solving because sometimes we can't easily understand or catch up with the given".* ***PARTICIPANT 2, Male;***
>
> *"The hardest difficulties and challenges I faced in the STEM strand were having overload requirements and not having enough time during the examinations and quizzes for the mathematics subject".* ***PARTICIPANT 8, Male***
>
> Looking into the challenge of STEM students, still education is the backbone of any country for its economic and social development. Science, technology, engineering, and mathematics (STEM) education and skills are required for tough analytical problem-solving and supporting job functions. National Science Board (2014) has researched employment prospects and found that major broad occupation exists in the science and engineering categories.

The second generated theme from the student participants was **complex scientific concepts,** they are facing just challenges in taking up STEM in senior high school.

We are in the process of transitioning from the digital revolution, or the information age, to the age of synthesis (Cai, 2011). We argue that teaching and learning in the age

of synthesis targets new domains of expertise: evaluating and applying seemingly disparate information, accommodating the accelerated emergence of new knowledge and sophisticated technologies, preparing for transdisciplinary careers, and merging traditional disciplines to better meet the needs of citizens in the 21st century.

On the challenges faced by the senior high school STEM student on complex scientific concepts, they shared their thoughts about this matter;

> *"Stress and lack of sleep are some of the most common difficulties STEM students face while navigating through complex scientific concepts or mathematical problem-solving".* ***PARTICIPANT 7, Male;***
>
> *"The challenges faced by STEM students are time management for all the projects required by numerous subject teachers and memorizing the formulas for General Mathematics and Pre-Calculus".* ***PARTICIPANT 9, Male;***
>
> *"Solving Math problems is the most common weakness for us students. But we are learning and improving".* ***PARTICIPANT 10, Male;***
>
> *"Challenges faced by STEM students are time managing all the requirements in each subject and also in problem-solving you have to memorize all formulas and understand each concept".* ***PARTICIPANT 11, Female***

On the coping mechanism of the STEM senior high school participants to address those challenges they experienced

Several research projects in educational assessment reveal that students struggle when it comes to accomplishing problem-solving tasks in Mathematics. Such a struggle is primarily due to the complexities of problem-solving.

The generated theme from the student participants was **Time management.**

Time management is the process of consciously planning and controlling time spent on specific tasks to increase how efficient you are.

On the coping mechanism of STEM students, their coping mechanism for the challenges that they had encountered was Time Management.

As the student participants shared their experiences as'

> *"We typically manage our stress associated with the rigorous academic demands and workload by managing our time and doing all the work step by step".* ***PARTICIPANT 2, Male;***
>
> *"Talking with my friends asking them about our lessons and ranting in our group chat. I have to balance my time for other extra activities".* ***PARTICIPANT 4, Male;***

"We manage it by helping each other. I have to make sure that my time will be managed properly". ***PARTICIPANT 5, Female;***

"Stress- eating. That temporary feeling of jubilation boosts our state to do things that we should. I need to balance my time with other house choirs". ***PARTICIPANT 6, Male;***

"Having some bonding sometimes is our way to manage our stress also having group activities inside the classroom such as games to release our stress". ***PARTICIPANT 7, Male;***

"I can manage the stress associated with the rigorous academic demands and workload in STEM by having time management and sometimes having fun, unwinding, and chilling". ***PARTICIPANT 8, Male;***

"Through time management and doing what we want on weekends". ***PARTICIPANT 9, Male***

Conclusions

The following conclusions are drawn based on the findings of the study.

Lack of facilities and equipment and lack of competent and qualified teachers are the common reasons why they are not offering STEM strands. To meet and to address the following freezing problems faced by the schools not offering STEM strands they need to Improve school facilities and capacitate teachers.

Recommendations

From the salient findings of this study and the conclusion reached, the following recommendations are presented;

1. The school heads may encourage Science and Mathematics teachers to undergo training in curriculum planning and implementation.
2. The Department of Education may provide technical assistance on the implementation of the STEM strand in schools that want to implement STEM strands.
3. The Department of Education may provide all the necessary facilities and equipment to the school to cater to STEM students.
4. Continuous retooling and professional development programs for STEM teachers must be sustained to align their pedagogy to the Generation Z students, and
5. Similar studies using other variables should be conducted to determine if the same results are obtained to confirm the conclusion that the extent of implementation of the STEM curriculum

Compliance with Ethical Standards

This paper has a single author and confirms the ethical standards.

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WELL-BEING OF NON-READERS IN TANTANGAN 1 DISTRICT: A CASE STUDY

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ABSTRACT

The definition of reading has moved beyond decoding printed symbols and recognizing words, thus, reading is a process of constructing meaning to a written text. It is a dream of any teacher that every student may acquire knowledge, skill, and understanding to combat the challenges of life in order to meet the global demands. The study aimed to explore the well-being of non-readers in the Tantangan 1 district. This research used qualitative research which is a research approach that allows the researcher to interpret the life of people to understand their problems better and deeper to generate solutions that are relevant to their situations. The participants of the study are 10 teachers with tagged non-readers in their class for the school year 2023-2024. A semi-structured guide survey questionnaire was used to collect the necessary information and responses from the participants of the study. Thematic analysis was used to process the responses of the participants. On how non-reader pupils in your class access and engage with information and knowledge in your daily activities theme that was generated based on the teacher-participants was Varied Teaching and Learning Strategies. On how they overcome the challenges as a non-reader in their class in daily activities in school, the generated theme was Various Strategies and Support Systems based on the responses of the teacher-participants. Finally, On the best practices of class/school to ensure the well-being of the tagged non-readers of their class/school and are those best practices effective in promoting the well-being of your pupils the formulated theme was individualized instruction.

Keywords: *Well-being, Non-readers, Case study, Tantangan*

INTRODUCTION

Every Filipino child needs to be provided with quality, equitable, and complete basic education. The Department of Education in the Philippines implements various mechanisms to ensure that no one among the children is left behind, guarantee inclusive and equitable quality education, and promote lifelong learning opportunities for all. It has been a perennial problem of the teachers and the school about the reading ability of pupils though there are many interventions made by the teachers.

To strengthen this program, the Department of Education issued the DepEd Order No. 45, series of 2002 to enforce the policy that “school children must be a reader by Grade 3 and that no child be promoted to Grade 4 unless he shows mastery of the basic literacy skills”.

In response to the increasing number of struggling readers and poor reading comprehension of learners in public schools, which is a common problem in the Philippine education system, the Department of Education (DepEd) used several intervention programs to equip elementary pupils with higher levels of learning and to give support for those children who are left behind in reading and writing. The Department of Education implements various programs to respond to the struggling readers’ needs. Some of the programs implemented were the Pull-Out Scheme, Remedial Reading Class, Summer Reading Camp, and Feeding Program.

In detail, the Pull-Out Scheme is a program that directs the identified non-readers to report to the reading session during the agreed schedule for intensive instruction or session under the trained reading teacher. On the other hand, the “Remedial Reading Class” is an intervention that helps reduce the number of pupils who have extreme difficulty in reading and writing. During summer, there is a “Summer Reading Camp” for the identified frustrated readers. These readers are taught how to read for two weeks during summer. Meanwhile, there is this “School Feeding Program”, which works on the nutrition of the children to enhance their school performance.

Despite the efforts and initiatives of the Department of Education, there are gaps and problems encountered in the implementation of the reading program. In fact, the teachers and administrators face different obstacles in various reading interventions. The challenges they encounter include the classroom size, learner’s attitudes and behaviors, resources and parent involvement.

Consequently, the result of the 2018 Programmed International Student Assessment (PISA) revealed that Filipino students ranked last among the 79 countries and got a rating of 340 which is the lowest score in reading comprehension. The result reflects the poor performance in reading comprehension of Filipino students and recognizes the gaps in attaining the quality of basic education in our country.

Similarly, the performance of the Grade 6 students in the National Achievement Test (NAT) has been declining in the last three years based on the Regional Memorandum 157, series of 2019. The national average mean percentage score (MPS) in grade 6 continued its downward trajectory at 37.44 which is the weakest performance in the history of DepEd. In addition, the Phil-IRI results also showed an increasing number of frustrated readers with poor reading comprehension based on the results of 2012-2015 data.

With these challenges, the researcher is propagated to conduct an evaluation research to the well-being of Non-readers of Tantangan 1 District.

Research Questions

The primary purpose of this study is to explore the live experiences of Non-readers of Tantangan 1 District, and go deeper into the heart of the issue and to bring the point of view, perceptions, insights, and feelings of the participants. Specifically, the study sought to answer the following questions:

1. What are the challenges encountered by the pupils in their reading class?
2. What are the coping mechanisms of the pupils in overcoming their difficulties in reading class?
3. What are possible school programs may craft to ensure the well-being of nonreaders?

METHODOLOGY

The study uses qualitative research in particularly case study. Which is a research approach that allows the researcher to interpret the life of people to understand their problems better and deeper to generate solutions that are relevant to their situations, Wa-Ambaleka (2018).

The respondents of the study will be ten (10) elementary teachers in Tantangan 1 for the school year 2023-2024 with following inclusion criteria, a. teachers must be permanent or regular, b. must be at least 3 to five years in the teaching in public schools, c with nonreader pupils. Thematic analysis was use to process the responses of the participants of the study.

RESULTS

On the challenges encountered by the pupils in their reading class. The theme that was generated based on the teacher-participants was **Varied Teaching and Learning Strategies.**

On how they overcome the challenges as a non-reader in their class in daily activities in school in connection with the challenges, the generated theme was **Various Strategies and Support Systems.**

On the best practices of class/school to ensure the well-being of the tagged non-readers of their class/school and are those best practices effective in promoting the well-being of your

pupils. Based on the responses of the participants the formulated theme was **individualized instruction**

DISCUSSION

On the challenges encountered by the pupils in their reading class

The theme that was generated based on the teacher-participants was **Varied Teaching and Learning Strategies.**

Reading is a vital basic skill that a learner needs to develop to succeed in school. Reading is a cognitive process that involves decoding symbols to arrive at meaning. It is an active process of constructing meanings of words. Reading with a purpose helps the reader to direct information towards a goal and focuses their attention.

With this, teachers are doing their best to have a meaningful teaching and learning process. The teacher participants shared their experiences as;

> *"In my classroom, catering to non-reader pupils involves employing a variety of multisensory approaches to ensure they can access and engage with information effectively. Firstly, visual aids play a crucial role, such as using pictures, charts, and diagrams to convey concepts and instructions. Secondly, incorporating hands-on activities allows these students to interact with materials tangibly, facilitating better understanding. Thirdly, utilizing auditory resources such as recorded instructions or storytelling helps convey information in a different modality. Additionally, kinesthetic learning experiences, such as movement-based activities or manipulative tools, enable students to physically explore concepts. Lastly, peer support and collaboration create opportunities for these pupils to learn from their peers and participate actively in group tasks, fostering a sense of inclusivity and shared learning experiences. By integrating these strategies, non-reader students can effectively access and engage with the content presented in our daily activities".* ***Participant 1, Teacher I, and Female***

> *"To support non-reader pupils, I implement a multi-sensory strategy. Firstly, I utilize visual aids like diagrams, pictures, and videos to convey concepts and reinforce understanding beyond text. Secondly, hands-on experiments and manipulatives provide experiential learning opportunities, aiding in grasping abstract ideas directly. Additionally, auditory resources such as recorded lectures or podcasts cater to auditory learners. I also promote peer collaboration and discussion, fostering verbal communication and group learning. Finally, I leverage educational technology, including apps and software, to deliver interactive lessons tailored to diverse learning styles. These approaches ensure active participation and success for non-reader pupils, contributing to a supportive and inclusive learning*

*environment". **Participant 2, Teacher I, and Female;***

*For non-reader pupils in the class, it is essential to provide alternative ways for them to access and engage with information and knowledge through different strategies like providing visual aids, giving them hands-on activities, peer support, technology integration, and most of all encouragement and support. By implementing these strategies and creating a supportive learning environment, non-reader pupils can effectively access and engage with information and knowledge alongside their peers in daily classroom activities. **Participant 3, and Teacher II***

The result of the study is related to the statement of Anonat (2011) states that Reading is an important skill to develop because it is fundamental to a person to function in today's society like assuming duties and responsibilities in a day-to-day activity. Also, reading develops critical thinking as it allows the learner to imagine, infer, predict, conclude, and draw judgments among other skills. In addition, it allows the learner to discover new things. Through reading books, magazines, and articles on the internet, the learners will become aware of the latest innovations and discoveries in various fields.

On how they overcome the challenges as a non-reader in their class in daily activities in school

In connection with the challenges, the generated theme was **Various Strategies and Support Systems** based on the responses of the teacher-participants as they share:

*"In my class, non-readers face a unique set of challenges in their daily activities at school. However, they often overcome these obstacles through various strategies and support systems. Firstly, they rely heavily on visual aids and hands-on learning experiences provided by teachers. These might include diagrams, charts, and models that help them grasp concepts without relying solely on written text. Additionally, peer support plays a crucial role as classmates often assist non-readers by explaining instructions or clarifying content. Teachers also adapt teaching methods, incorporating multimedia resources and interactive activities to accommodate diverse learning styles. Furthermore, non-readers may develop compensatory skills such as strong listening and observation abilities to compensate for their reading difficulties. Finally, schools often offer specialized interventions and support services tailored to the needs of non-readers, providing additional resources and assistance as necessary to ensure their academic success. Through these approaches, non-readers can effectively navigate the challenges they encounter in the classroom and actively engage in their educational journey". **Participant 1, Teacher I, and Female;***

"Non-readers face significant challenges in navigating daily activities in school, but there are various strategies they can employ to overcome these obstacles. Firstly, they often rely heavily on auditory cues and verbal

*instructions provided by teachers and peers. Active listening becomes paramount, as they must absorb information through lectures, discussions, and oral explanations. Additionally, non-readers may utilize alternative methods of accessing written content, such as audio recordings or assistive technology like screen readers. Collaborating with classmates who can assist in interpreting written materials or providing summaries can also be beneficial. Moreover, cultivating strong communication skills enables non-readers to advocate for themselves and express their needs to teachers and support staff effectively. By embracing these strategies and seeking support when necessary, non-readers can successfully navigate the challenges of school and participate fully in academic and social activities**". Participant 2 Teacher I, and Female;***

*"Non-readers face significant challenges in a classroom setting where literacy skills are essential. To overcome these obstacles, they often rely heavily on auditory instruction and verbal communication. In daily activities, non-readers may actively engage with teachers and peers to gather information through listening and asking questions. They might also use alternative learning strategies, such as visual aids, hands-on activities, or digital resources that don't heavily rely on text. Additionally, collaboration with classmates who can read may be key, as they can provide support and assistance in understanding written instructions or materials. With determination and support from teachers and peers, non-readers can navigate their daily school activities successfully". **Participant 4 Teacher III, and Female;***

*"As a teacher, I utilize personalized learning plans, explicit instruction, and visual aids to support nonreaders in improving their reading skills. Interactive read-aloud sessions and small group instruction foster active participation and create a supportive learning environment. Collaboration with families and consistent encouragement helps boost confidence and motivation. Ongoing assessment allows for adjustments to instruction based on nonreaders' needs. Overall, these strategies aim to create an inclusive environment where nonreaders feel empowered to succeed in reading both at school and at home". **Participant 10, Teacher III, and Female***

With the result of the study, as Fosudo (2010) affirms that the acquisition of reading skills has a beneficial effect on all school subjects, including social studies, science, mathematics, and so on. Poor reading skills can make a child develop a poor attitude toward school and can create self-esteem problems later in life.

The reading skill of the pupils is very important to have a meaningful teaching and learning process. Thus, nonreaders overcome the challenges in their class with the help of their teachers.

On the best practices of class/school to ensure the well-being of the tagged non-readers of their class/school and are those best practices effective in promoting the well-being of your pupils

Based on the responses of the participants the formulated theme was **individualized instruction.**

Individualized instruction is an effective teaching strategy for at-risk students. From Socrates' recitation to L. Vygotsky's scaffolding, educators have used many flavors of individualized instruction to reach each child. Individualized instruction can be broken down into two major components: learning and motivation. To individualize instruction for at-risk students, the teacher needs to choose flexible strategies that allow for student differences. Effective individualized learning hooks new material to prior knowledge, recognizing the child's culture and experiences.

The teacher participants shared their best practices such as:

> *"In our school, we employ a variety of best practices to ensure the well-being of non-readers in our classes. One approach we find effective is individualized instruction, where we tailor learning materials and activities to meet the unique needs of each non-reader. We also implement small group instruction to provide targeted support, allowing us to focus on specific skills and concepts. Peer support and collaboration play a crucial role as well, as we pair non-readers with peers who can serve as mentors or reading buddies, fostering a sense of belonging and community. Additionally, we create a supportive classroom environment where students feel safe to take risks and ask for help, while also celebrating their progress and achievements through positive reinforcement. While these practices require flexibility and ongoing evaluation, we find that they are effective in promoting the well-being of our pupils by providing them with the necessary support, resources, and encouragement to thrive academically and emotionally".* ***Participant 1, Teacher II, and Female;***

> *"In our classroom, we prioritize the well-being of non-readers through a combination of individualized instruction, small group support, and a nurturing classroom environment. We recognize that each student has unique needs and learning styles, so we tailor instruction to meet those needs, whether it's through hands-on activities, visual aids, or peer collaboration. By providing a supportive and inclusive atmosphere, we create a safe space where non-readers feel comfortable taking risks and asking for help. Our continuous assessment and monitoring ensure that we can adjust our approaches as needed to support their growth. Through these practices, we've seen positive outcomes in terms of both academic progress and emotional well-being. Students feel valued, motivated, and empowered to overcome challenges, fostering a sense of confidence and belonging in our classroom community".* ***Participant 2, Teacher I, and Female;***

"In our class/school, we prioritize the well-being of non-readers by implementing several best practices. Firstly, we create a supportive and inclusive environment where students feel safe to express their challenges and receive personalized support. Individualized learning plans are developed to cater to their specific needs, incorporating strategies such as one-on-one tutoring, small group instruction, and multisensory approaches to literacy. Additionally, we offer regular opportunities for non-readers to engage in alternative forms of expression and communication, such as art, music, and oral storytelling, to build confidence and self-esteem. These practices are highly effective in promoting the well-being of our pupils, as they not only address academic difficulties but also foster a sense of belonging and accomplishment, ultimately empowering non-readers to reach their full potential". ***Participant 4, Teacher I, and Female;***

"In my class, ensuring the well-being of non-readers involves several best practices. I created a supportive and inclusive environment where students feel comfortable expressing their challenges with reading. I offer personalized support through one-on-one tutoring or small-group instruction". ***Participant 5, Teacher II, and Female;***

"Best practices include using visual aids, hands-on activities, peer support through reading buddies, and personalized education plans. These practices effectively promote the well-being of non-readers by catering to their individual needs and creating a supportive learning environment". ***Participant 6, Teacher II, and Female;***

"Best practices for ensuring the well-being of non-readers in our class/school include providing alternative forms of communication, such as visuals and hands-on activities, assigning reading buddies for peer support, and offering personalized assistance through individualized education plans (IEPs). These practices are effective in promoting the well-being of our pupils by addressing their unique needs and fostering a supportive learning environment". ***Participant 7, Teacher III, and Female;***

"To accommodate the diverse learning needs and boost the confidence in learning, the following are the best practices that show effectiveness in promoting the well-being of our pupils (non-readers), a. Creating a supportive classroom environment, b. Encouraging cooperative learning and peer support, c. We offer differentiated activities or instruction, d. Provide them with hands–on activities and visual aids". ***Participant 9, Teacher II, and Female;***

"In our classroom, we prioritize the well-being of non-readers through a combination of individualized instruction, small group support, and a nurturing classroom environment. We recognize that each student has unique needs and learning styles, so we tailor instruction to meet those needs, whether it's through hands-on activities, visual aids, or peer

collaboration. By providing a supportive and inclusive atmosphere, we create a safe space where non-readers feel comfortable taking risks and asking for help. Our continuous assessment and monitoring ensure that we can adjust our approaches as needed to support their growth. Through these practices, we've seen positive outcomes in terms of both academic progress and emotional well-being. Students feel valued, motivated, and empowered to overcome challenges, fostering a sense of confidence and belonging in our classroom community". ***Participant 10, Teacher II, and Female***

The result of the study is associated with the effective teaching practices in handling non-readers comprising the use of teachers' adjustments, strategies and scaffolds to establish reading mastery, exposing them to letter sounds, and short stories, and the use of follow-up. WH questions enhanced their reading performance significantly. Variations of reading teachers' nature as an enabler, a facilitator, a humanist, a behaviorist, and an expert, as regards to their teaching practices, were proven significant to students' reading effectiveness (Davis, 2016).

Conclusions

The following conclusions are drawn based on the findings of the study.

Varied teaching and learning strategies are used by the teachers who handle tagged non-readers in the Tantangan 1 district.

Support System and Various Strategies used by the Teachers to overcome challenges in handling tagged non-readers.

Finally, individualized instructions is the best practices of class/school to ensure the well-being of the tagged non-readers of their class/school and are those best practices effective in promoting the well-being of your pupils.

Recommendations

From the salient findings of this study and the conclusion reached, the following recommendations are presented;

The school may close supervision will have to be conducted by school administrators to observe reading teachers and find ways to conduct training on the enhancement of teaching adjustments, strategies, and scaffolds that will improve teaching practices in the teaching of reading. The teachers may continue their best practices to eradicate non-readers in the school. That this study be replicated in wide scope to have a clearer picture quantitatively and may add variables not included in the study.

Compliance with Ethical Standards

This paper has a single author and confirms the ethical standards.

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AN ASSESSMENT ON INSTRUCTIONAL METHODS USED BY THE SOCIAL SCIENCE TEACHERS AT MINDANAO STATE UNIVERSITY-SULU: STUDENTS' PERSPECTIVES

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ABSTRACT

This is a descriptive-correlational study which determines the extent of students' assessment of the instructional methods used by Social Science teachers at Mindanao State University (MSU)-Sulu during the Academic Year 2022 – 2023. Adopting weighted mean, standard deviation, t-Test for independent samples, One-way ANOVA, and Pearson's r test of correlation, this study reveals the following findings: 1) On demographic profile; out of 100 student-respondents, more than one-third is within 18 years old & above, mostly male, equally distributed in four year levels, whose parents have elementary level of education, and whose parents' average monthly income is within 5,000–10,000 range. 2) Generally, the used of instructional methods by social science teachers are preferred by college students across year levels. 3) Profile variables such as year level and parent's educational attainment intervened in ways how students assessed the extent of instructional methods used by social science teachers. 4) Teaching Methods and Learning Conditions are moderately correlated. 5) This study tends to confirm Gestalt Theory, which stresses that learning is a process of acquiring and integrating into one's personality, information, skills, habits and attitudes. Learning takes place when the whole being and the total stimulation are considered. This simply means that the individual does not only act merely to stimulus but rather to the background and setting. A teacher, through his/her instructional methods affects the students' initiatives and enthusiasm. Since instruction should begin at the point of interest of the student, a full knowledge of students preferred instructional methods is required.

Keywords: *Instructional Methods, Assessment, Social Science, Perspective, Teachers*

INTRODUCTION

Teaching is to be interpreted as a process of stimulating, directing and guiding the learner. The teacher must have an intensive knowledge and understanding of the physical, mental, social and emotional potentialities of those educational activities he hopes to direct and guide.

Teacher education today differs considerably from the past in which it consisted of a few courses on educational theory. Programs are much more field oriented than ever before, requiring prospective teachers to spend more time onsite working with students in school. The present emphasis on practical experience with students should not be interpreted as a movement away from theory. Rather, educational theory is being integrated with practice. This integration recognizes that theory, to be internalized, must be learned in the context in which it is being applied. Social Science is one of the fundamental learning areas wherein a person must greatly involve himself. It is empirical that every individual must equip himself with the necessary concepts and skills in Social Science. In everyday living, one uses Social Science, whether one is aware of it or not, (Bhatnagar, 2018).

Each school day, millions of parents entrust their most precious possessions to the care and influence of teachers. It should come as no surprise that what teachers do and how they do it are subjects of great interest and potentially intense controversy. Undeniably, a teacher is a person whose primary profession or occupational function is to help others learn and develop new ways because students are passive learners and that their minds are like blank slates to be filled up with bits of knowledge and information, (Prescot and David, 1976).

Apparently, teachers are now struggling with students who are difficult to teach, where no one version of teaching strategy is likely to be most effective with all of them. The wide number of variables on which these students differ interacts with the strategy's teachers use to teach them, (Wohlwill and Heft, 1987; Moore et al, 2003).

There is a need to build a repertoire of teaching strategies from which the teacher could select one that fits the learning situations. It is then the aim of this research to assess the effects of different instructional methods used by Social Science teachers as perceived by the students of Mindanao State University-Sulu.

Research Questions:

1. What is the demographic profile of student-respondents in terms of:
    1.1 age,
    1.2 gender,
    1.3-year level,
    1.4 parent's educational attainment, and 1.5 parent's average monthly income?

2. What is the extent of the effectiveness of instructional methods used by the social science teachers of MSU-Sulu as perceived by students in the context of:
    2.1 Teaching Methods; and
    2.2 Learning Conditions?
3. Is there a significant difference in the extent of the effectiveness of instructional methods used by the social science teachers at Mindanao State University - Sulu when data are grouped according to their demographic profile in terms of:
    3.1 Age;
    3.2 Gender;
    3.3 Year Level;
    3.4 Parents Educational Attainment; and
    3.5 Parents Monthly Income?
4. Is there a significant correlation among the sub-categories subsumed under extent of the effectiveness of instructional methods used by the social science teachers at Mindanao State University - Sulu in terms of teaching methods, and learning conditions?

METHODOLOGY

Research methodology is a blueprint that guides the researcher from the very inception of the scientific investigation until its very completion (Harris, 1979).

Hence, this chapter centers its brief discussion on the following aspects: research design, research locale, respondents of the study, research instrument, sampling design, data gathering procedure, validity and reliability and statistical treatment of data.

Research Design

Owing that there was a hypothesis validated in this study, the research design used is descriptive-exploratory in nature. It aimed to appraise the instructional methods used by Social Science Teachers as perceived by the students of Mindanao State University-Sulu.

This method was utilized because a descriptive method collates, tests and validates data. Description emerges following creative exploration, and serves to organize the findings in order to fit them with explanations, and then test or validate those explanations (Krathwohl, 1993). Furthermore, a descriptive research design interprets and reveals condition that exists or do not exist and explanatorily supplies the needed knowledge and experiences that will aid in setting a more detailed study, (Venson, 2004).

Research Locale

The study was conducted among the Students of Mindanao State University-Sulu, during the school year 2022-2023. Mindanao State University is located in the Municipality of Jolo, Province of Sulu. Jolo is the capital town of Sulu.

Respondents of the Study

The respondents of this study were one hundred (100) Students of Mindanao State University-Sulu during the School Year 2022-2023. Specifically, respondents included in this study were students taking Social Science as major or subjects as part of their academic requirements in the aforesaid school. Twenty-five (25) students were drawn in each year level from 1st year to 4th year. Table below shows the distribution of samples in this study.

Table 1.1: Distribution of Samples by Year Level

Mindanao State University-Sulu	Number of Student-Respondents
First Year	25
Second Year	25
Third Year	25
Fourth Year	25
TOTAL	**100**

Sampling Design

A non-probability sampling method through purposive sampling procedure was employed in this study. That is, due to access, availability and time constraints, representative samples of twenty-five (25) students were drawn as representative for each year level, from First Year to Fourth Year. The use of purposive sampling procedure ensures the collection of desired quality and quantity of data used in this study.

Data Gathering Procedure

In the collection of data, a permit to administer the questionnaire was sought from the Dean of the School of Graduate Studies of Sulu State College and then from the University Chancellor, University Vice Chancellor for Academic Affairs and from the College Deans. The researcher conducted the launching and administration as well as the retrieval of the questionnaire personally.

After such, the questionnaire was subjected to presentation, analysis and interpretation of data. Then, a final draft was submitted for finalization and corrections.

Research Instrument

The study used a descriptive method of research. Questionnaire was the main instrument utilized in gathering the empirical data needed in this study. Interviews were also conducted to verify data collected.

The students' set of questionnaires is composed of three parts. Part I Respondent's Demographic Profile (Age, Gender, Year Level, Parent's Educational Attainment, Parent's Monthly Income, and Part II Extent of Instructional Methods used by the Social Science Teachers which is then categorized as: A – Teaching Methods, and B – Learning Condition

Validity and Reliability

Since this particular study utilized the standardized questionnaire of Tagle, R., (2007). This standardized instrument was already used in previous studies; thus, their validity and reliability are already established. Therefore, there is no need for the present researcher to undergo revalidation and retesting processes of the reliability of this instrument.

Statistical Treatment of the Data

In generating the primary empirical data for this study, the following statistical tools were employed;

1. **Frequency and Percentage.** The frequency and percentage are the statistical tools used to determine the profile of the students as to gender, age, year level, parent's educational attainment, and parent's monthly income.
2. **Weighted Mean and Standard Deviation.** The weighted mean and standard deviation were used to determine the extent of Instructional Methods Used by the Social Science teachers at Mindanao State University – Sulu in terms of Teaching Methods and Learning Conditions.
3. **T-test and One-way Analysis of Variance (ANOVA).** T-test for independent variable were employed to determine the significant differences in the extent of Instructional Methods Used by the Social Science teachers at Mindanao State University – Sulu when data are grouped according gender; and One-way Analysis of Variance (ANOVA) will be employed to determine the significant differences in the extent of Instructional Methods Used by the Social Science teachers at Mindanao State University – Sulu when data are grouped according to age, year level, parent's educational attainment, and parent's monthly income.
4. **Pearson Product-Moment Correlation.** Pearson product-moment correlation were used to determine the significant correlation among the sub-categories subsumed under the Instructional Methods Used by the Social Science

teachers at Mindanao State University – Sulu in terms of Teaching Methods and Learning Conditions.

Table 1.2: SCALE TO BE USED

Point	Scale Value	Interpretation
5	4.50 – 5.00	Highly Preferred
4	3.50 – 4.49	Preferred
3	2.50 – 3.49	Moderately Preferred
2	1.50 – 2.49	Not Preferred
1	1.00 – 1.49	Highly Not Preferred

RESULTS AND DISCUSSION

This section deals with the presentations, analyses and interpretations of results based on the data gathered for this study. Specifically, it illustrates the extent of students' assessment of the instructional methods used by Social Science teachers at Mindanao State University (MSU)-Sulu. It also deals with student-respondent's demographic profiles in terms age, gender, year level, parent's educational attainment, and Parent's average monthly income; the extent of effectiveness of instructional methods used by the social science teachers as perceived by students in the context of Teaching Methods and Learning Conditions; and the significant correlation and differences in these sub-categories when data are classified according to student-respondent's demographic profiles.

The following are the presentations, analyses and interpretations of results based on the proper scoring and statistical treatments of data gathered for this study that which correspond to each of the research questions:

1. What is the demographic profile of student-respondents in terms of: 1.1 age, 1.2 gender, 1.3-year level, 1.4 parent's educational attainment, and 1.5 parent's average monthly income?

1.1 In terms of Age

Table 1.1 reflects the demographic profile of student-respondents in terms of age. It can be browsed from this table that out of 100 student-respondents, 40 (40.0%) are 18 years old & below, 34 (34.0%) are 19-20 years old, 22 (22.0%) are 21-22 years old, and 4 (4.0%) are 23 years old & above. This result reveals that more than one-third of the total student-respondents involved in this study are within 18 years old & below. This result implies that students at MSU-Sulu involved in this study are within the lowest age bracket as categorized in this study.

Table 1.1 Demographic profile of student-respondents at MSU-Sulu in terms of age

Age	Number of Students	Percent
18 years old & below	40	40.0%
19-20 years old	34	34.0%
21-22 years old	22	22.0%
23 years old & above	4	4.0%
Total	**100**	**100%**

1.2 In terms of Gender

Table 1.2 shows the demographic profile of student-respondents in terms of gender. It can be gleaned from this table that out of 100 pupil-respondents, 56 (56.0%) are male, and 44 (44.0%) are female. This result reveals that more than one-half of the total student-respondents involved in this study are male. This result implies that students of MSU-Sulu who participated in this study, though with little disparity are more of male gender.

Table 1.2 Demographic profile of student-respondents at MSU-Sulu in terms of gender

Gender	Number of Students	Percent
Male	56	56.0%
Female	44	44.0%
Total	**100**	**100%**

1.3 In terms of Year Level

Table 1.3 shows the demographic profile of student-respondents in terms of year level. It can be gleaned from this table that out of 100 student-respondents, 25 (25.0%) are first year, 24 (24.0%) are second year, 26 (26.0%) is third year, and 25 (25.0%) are fourth year. This result reveals that student-respondents involved in this study are almost equally prorated into the four-year levels.

Table 1.3 Demographic profile of student-respondents at MSU-Sulu in terms of year level

Year Level	Number of Students	Percent
First Year	25	25.0%
Second Year	24	24.0%
Third Year	26	26.0%
Fourth Year	25	25.0%
Total	**100**	**100%**

1.4 In terms of Parent's Educational Attainment

Table 1.4 presents the demographic profile of student-respondents in terms of parent's educational attainment. It can be gleaned from this table that out of 100 student-respondents, 38 (38.0%) are whose parents have no formal education, 50 (50.0%) are whose parents have elementary level of education, 8 (8.0%) are whose parents have secondary level of education, and 4 (4.0%) are whose parents have college level of education. This result indicates that one-half of the total student-respondents are whose parents have elementary level of education. It implies that student-respondents who participated in this study could hardly obtain academic supports from their parents given that most of their parents have merely elementary level of education.

Table 1.4 Demographic profile of student-respondents at MSU-Sulu in terms of parent's educational attainment

Parent's Educational Attainment	Number of Students	Percent
No formal education	38	38.0%
Elementary level	50	50.0%
Secondary level	8	8.0%
College level	4	4.0%
Total	**100**	**100%**

1.5 In terms of Parent's Average Monthly Income

Table 1.5 shows the demographic profile of student-respondents in terms of parent's average monthly income. This table reveals that out of 100 student-respondents, 67 (67.0%) are whose parents with 5,000 & below, 27 (27.0%) are whose parents with 5,000 – 10,000, 4 (04.0%) are whose parents with 10,000 – 15,000, and 2 (2.0%) are whose parents with 15,000 & above of average monthly family income, respectively. This result reveals that great majority of the parents of the student-respondents are whose parents' average monthly income is within 5,000 – 10,000 range. This result implies that, most of the students at MSU-Sulu are whose parents considered as low-income earners; hence, these students could hardly obtain sufficient financial support from their parents for their schooling.

Table 1.5 Demographic profile of student-respondents at MSU-Sulu in terms of parent's average monthly income

Parent's Average Monthly Income	Number of Students	Percent
5,000 & below	67	67.0%
5,000 – 10,000	27	27.0%

10,000 – 15,000	4	4.0%
15,000 & above	2	2.0%
Total	**100**	**100%**

2. What is the extent of the effectiveness of instructional methods used by the social science teachers of MSU-Sulu as perceived by students in the context of: 2.1 Teaching Methods; and 2.2 Learning Conditions?

2.1 In terms of Teaching Methods

Table 2.1 shows the extent of the effectiveness of instructional methods used by the social science teachers of MSU-Sulu as perceived by students in the context of teaching methods. This category obtained a total weighted mean score of 4.3233 with standard deviation of .24266 which is rated as "Preferred". This result indicates that students at MSU-Sulu preferred the art of teaching used by teachers the one with the use of devices and application of methods and principles in teaching in order to affect the proper development of the individual student. It implies that college instructors are employing instructional method in teaching social science that requires the use of varied teaching devices.

It is noticeable that student-respondents rated the following items as "Preferred": "Lecture-it is a teaching procedure for clarifying or explaining a major idea cast in the form of question or a problem. This type can be dominated by the teacher, can be discussion between the class and the teacher, and can be accompanied by visual materials such as slides, films and transparencies", "Laboratory/experimental-one way of teaching that actively involves every student in the class in manipulating materials and simple equipment to find answers to questions and solve problems", "Problem solving-refers to the process of removing difficulty through rational procedures involving analytical and reflective thinking", "Fieldtrip-it is an out of classroom activity whereby students study things in their natural settings", and "Reading/study type- this methodology requires students to gather facts and information or solve problems by reading printed materials". Table 2.1 Extent of the effectiveness of instructional methods used by the social science teachers of MSU-Sulu as perceived by students in the context of teaching methods

	Statements	Mean	S.D.	Rating
1	Demonstration-this learning activity is performed by a student or a teacher while the rest of the class observe. This activity is done for experiments involving expensive materials or due to lack of materials.	4.7900	.43333	Highly Preferred
2	Lecture-it is a teaching procedure for clarifying or explaining a major idea	4.2700	.46829	Preferred

	cast in the form of question or a problem. This type can be dominated by the teacher, can be discussion between the class and the teacher, and can be accompanied by visual materials such as slides, films and transparencies.			
3	Project-is a significant unit of problematic nature, planned and carried to completion by the learners in the natural manner and involving the use of physical materials to complete the unit of experience.	4.6100	.54855	Highly Preferred
4	Laboratory/experimental-one way of teaching that actively involves every student in the class in manipulating materials and simple equipment to find answers to questions and solve problems.	4.3900	.60126	Preferred
5	Problem solving-Refers to the process of removing difficulty through rational procedures involving analytical and reflective thinking.	4.2100	.62434	Preferred
6	Fieldtrip-it is an out of classroom activity whereby students study things in their natural settings.	3.9800	.75183	Preferred
7	Reading/study type- this methodology requires students to gather facts and information or solve problems by reading printed materials.	4.2000	.65134	Preferred
8	Games-These are activities or contests governed by sets of rules. People engage in games for recreation and to develop mental or physical skills.	4.1400	.73882	Preferred
9	Debate-this methodology requires one to talk or argue about something at length and in detail, especially as part of a formal exchange of opinion.	4.3200	.70896	Preferred
Total Weighted Mean		**4.3233**	**.24266**	**Preferred**

Legend: (5) 4.50-5.00= Highly Preferred; (4) 3.50-4.49= Preferred; (3) 2.50- 3.49= Moderately Preferred; (2) 1.50- 2.49= Not Preferred; (1) 1.00- 1.49= Highly Not Preferred

2.2 In terms of Learning Conditions

Table 2.2 shows the extent of the effectiveness of instructional methods used by the social science teachers of MSU-Sulu as perceived by students in the context of learning conditions. This category obtained a total weighted mean score of 4.2142 with standard deviation of .25984 which is rated as “Preferred”. This result indicates that students at MSU-Sulu preferred the kind of learning conditions they presently have as effective instructional methods in teaching social science. It implies that college instructors are providing efficient learning conditions for students to learn effectively social science concepts.

It is noticeable that student-respondents rated the following items as “Preferred”: “Complexity of the subject matter”, “Availability of textbooks”, “Inadequacy of the library facilities”, “Inadequacy of audio-visual room, equipment and facilities”, “Limited school site”, “Poor classroom conditions”, “Inadequacy of children’s tables, chairs, lockers”, “Lack of manipulative materials”, and “Lack of learning resource centers/corners”.

Table 2.2 Extent of the effectiveness of instructional methods used by the social science teachers of MSU-Sulu as perceived by students in the context of learning conditions

Statements		Mean	S.D.	Rating
1	Knowledge of the teacher	4.7300	.46829	Highly Preferred
2	Complexity of the subject matter	4.2800	.53333	Preferred
3	Availability of textbooks	4.1600	.69224	Preferred
4	Inadequacy of the library facilities	4.1300	.64597	Preferred
5	Inadequacy of audio-visual room, equipment and facilities	4.1100	.68009	Preferred
6	Limited school site	4.0700	.71428	Preferred
7	Poor classroom conditions	3.9500	.65713	Preferred
8	Inadequacy of children’s tables, chairs, lockers	4.2500	.70173	Preferred
9	Lack of manipulative materials	4.2000	.66667	Preferred
10	Lack of learning resource centers/corners	4.2000	.69631	Preferred
11	Inappropriate attitudes of the students	4.1800	.62571	Preferred
12	Lack of administrative support	4.3100	.64659	Preferred
Total Weighted Mean		**4.2142**	**.25984**	**Preferred**

Legend: (5) 4.50-5.00= Highly Preferred; (4) 3.50-4.49= Preferred; (3) 2.50- 3.49= Moderately Preferred; (2) 1.50- 2.49= Not Preferred; (1) 1.00- 1.49= Highly Not Preferred

3. Is there a significant difference in the extent of the effectiveness of instructional methods used by the social science teachers at Mindanao State University - Sulu when data are grouped according to their demographic profile in terms of: 3.1 Age; 3.2 Gender; 3.3 Year Level; 3.4 Parents Educational Attainment; and 3.5 Parents Monthly Income?

3.1 – According to Age

Table 3.1 presents the difference in the extent of the effectiveness of instructional methods used by the social science teachers at Mindanao State University - Sulu when data are grouped according to their demographic profile in terms of age. It can be gleaned from this table that unlike “Teaching Methods” other sub-category such as “Learning Conditions” which subsumed under the effectiveness of instructional methods used by the social science teachers with its corresponding F-value and probability value is indeed significant at alpha .05. This means that, student-respondents in this study despite that they vary in their age range, yet they indeed differ in their ways of assessing extent of effectiveness of instructional methods used by the social science teachers. This result implies that a student-respondent being 23 years old & above may not probably make him/her better perceiver toward the extent of effectiveness of instructional methods used by the social science teachers as against those belong to 17-18 years old, 19-20 years old, 21-22 years old, or vice versa.

Hence, it is safe to say that variable age has no significant intervention in ways how student-respondents perceive towards the extent of effectiveness of instructional methods used by social science teachers. Therefore, the hypothesis which states that “There is no significant difference in the extent of the effectiveness of instructional methods used by the social science teachers at Mindanao State University - Sulu when data are grouped according to their demographic profile in terms of age” is accepted.

Table 3.1 Difference in the extent of the effectiveness of instructional methods used by the social science teachers at Mindanao State University - Sulu when data are grouped according to their demographic profile in terms of age

SOURCES OF VARIATION		Sum of Squares	df	Mean Square	F	Sig.	Description
Teaching Methods	Between	.184	3	.061	1.043	.377	Not Significant
	Within Groups	5.646	96	.059			
	Total	5.830	99				
Learning Conditions	Between	1.277	3	.426	7.556	.000	Significant
	Within Groups	5.407	96	.056			
	Total	6.684	99				

*Significant at alpha 0.05

3.2 According to Gender

Table 3.2 presents the difference in the extent of the effectiveness of instructional methods used by the social science teachers at Mindanao State University - Sulu when data are grouped according to their demographic profile in terms of gender. It can be gleaned from this table that both sub-categories which subsumed under students' assessment of the extent of effectiveness of instructional methods with their corresponding Mean Differences, t-values and probability values are not significant at alpha .05. This means that, male and female student-respondents in this study although diverge in their gender; however, they do not differ in their perceptions toward the extent of effectiveness of instructional methods used by social science teachers. This result implies that being a male student-respondent may not probably make him better perceiver toward the extent of effectiveness of instructional method used by teachers as against his female counterpart, or vice versa.

Hence, it is safe to say that variable gender has no significant intervention in ways how student-respondents perceive towards the extent of effectiveness of instructional methods used by social science teachers. Therefore, the hypothesis which states that "There is no significant difference in the extent of the effectiveness of instructional methods used by the social science teachers at Mindanao State University - Sulu when data are grouped according to their demographic profile in terms of gender" is accepted.

Table 3.2 Difference in the extent of the effectiveness of instructional methods used by the social science teachers at Mindanao State University - Sulu when data are grouped according to their demographic profile in terms of gender

VARIABLES	**Grouping**	**Mean**	**S. D.**	**Mean Difference**	***t***	**Sig.**	**Description**
Teaching Methods	Male	4.3333	.19876	.02273	.463	.644	Not Significant
	Female	4.3106	.29111				
Learning Conditions	Male	4.2574	.23904	.09835	1.904	.060	Not Significant
	Female	4.1591	.27715				

*Significant at alpha 0.05

3.3 – According to Year Level

Table 3.3 presents the difference in the extent of the effectiveness of instructional methods used by the social science teachers at Mindanao State University - Sulu when data are grouped according to their demographic profile in terms of year level. It can be

gleaned from this table that the sub-category “Teaching Methods” which subsumed under students’ assessment of the extent of effectiveness of instructional methods used by teachers with its corresponding F-value and probability value is indeed significant at alpha .05. This means that, student-respondents in this study although vary in their year level; yet, they indeed differ in their assessment toward the extent of effectiveness of instructional methods used by social science teachers in terms of teaching methods. This result implies that a student-respondent being a fourth-year level may probably make him/her better perceiver toward the extent of effectiveness of instructional methods used by teachers in terms of teaching methods as against those enrolled in first year, second year, and third year levels, or vice versa.

Hence, it is safe to say that variable year level has indeed significant influence in the ways how student-respondents perceive towards the extent of effectiveness of instructional methods use by social science teachers in terms of teaching methods. Therefore, the hypothesis which states that “There is no significant difference in the extent of the effectiveness of instructional methods used by the social science teachers at Mindanao State University - Sulu when data are grouped according to their demographic profile in terms of year level” is rejected.

Table 3.3 Difference in the extent of the effectiveness of instructional methods used by the social science teachers at Mindanao State University - Sulu when data are grouped according to their demographic profile in terms of year level

SOURCES OF VARIATION		Sum of Squares	df	Mean Square	F	Sig.	Description
Teaching Methods	Between	.796	3	.265	5.062	.003	Significant
	Within Groups	5.033	96	.052			
	Total	5.830	99				
Learning Conditions	Between	.364	3	.121	1.843	.145	Not Significant
	Within Groups	6.320	96	.066			
	Total	6.684	99				

*Significant at alpha 0.05

A Post Hoc Analysis using Tukey Test was conducted to determine which among groups classified according to year level to have different levels of mean in area Teaching Methods when data are grouped according to student-respondents’ demographic profile in terms of year level.

The result of the analysis which is shown in Table 3.3.1 indicates that the difference in the means of the Teaching Methods is obtained by way of lower group means minus higher group means.

On Teaching Methods: It shows that Fourth Year group of student-respondents obtained the mean difference of -.21778* with Standard Error of .06476 and p-value of .006 which is significant at alpha=.05 over First Year students. So, under this sub-category, no other groups of student-respondents supposed to have better ways of assessing the extent of effectiveness of instructional methods used by social science teachers in terms of teaching methods than those students enrolled as Fourth Year College.

Table 3.3.1 Post Hoc Analysis: Differences in the level of mean in sub-category Teaching Methods when data are grouped according to year level

Dependent Variables	(I) Grouping by Age	(J) Grouping by Age	Mean Difference (I-J)	Std. Error	Sig.
Teaching Methods	First Year	Second Year	-.14833	.06544	.113
		Third Year	-.02547	.06414	.979
		Fourth Year	-.21778*	.06476	.006

* The mean difference is significant at the 0.05 level.

3.4 According to Parent's Educational Attainment

Table 3.4 presents the difference in the extent of the effectiveness of instructional methods used by the social science teachers at Mindanao State University - Sulu when data are grouped according to their demographic profile in terms of parent's educational attainment. It can be gleaned from this table that both of the sub-categories subsumed under students' assessment of the extent of effectiveness of instructional methods with their corresponding F-values and probability values are indeed significant at alpha .05. This means that, student-respondents in this study despite that they vary in their parent's educational attainment; yet, they indeed differ in their assessment toward the extent of effectiveness of instructional methods. This result implies that a student-respondent being his/her parents are college graduates may probably make him/her better perceiver toward the extent of effectiveness of instructional methods used by social science teachers as against those whose parents have no formal education, have elementary and high school levels of education, or vice versa.

Hence, it is safe to say that variable parent's educational attainment has indeed significant intervention in ways how student-respondents perceive towards the extent of effectiveness of instructional methods used by social science teachers. Therefore, the hypothesis which states that "There is no significant difference in the extent of the effectiveness of instructional methods used by the social science teachers at Mindanao State University - Sulu when data are grouped according to their demographic profile in terms of parent's educational attainment" is rejected.

Table 3.4 Difference in the extent of the effectiveness of instructional methods used by the social science teachers at Mindanao State University - Sulu when data are grouped according to their demographic profile in terms of parent's educational attainment

SOURCES OF VARIATION		Sum of Squares	df	Mean Square	F	Sig.	Description
Teaching Methods	Between Groups	.538	3	.179	3.250*	.025	Significant
	Within Groups	5.292	96	.055			
	Total	5.830	99				
Learning Conditions	Between Groups	1.057	3	.352	6.008*	.001	Significant
	Within Groups	5.628	96	.059			
	Total	6.684	99				

*Significant at alpha 0.05

A Post Hoc Analysis using Tukey Test was conducted to determine which among groups classified according to parent's educational attainment to have different levels of mean in area Teaching Methods and Learning Conditions when data are grouped according to student-respondents' demographic profile in terms of parent's educational attainment.

The result of the analysis which is shown in Table 3.4.1 indicates that the difference in the means of the Teaching Methods and Learning Conditions are obtained by way of lower group means minus higher group means.

On Teaching Methods: It shows that student-respondent's parents with College Level group obtained the mean difference of -.37281* with Standard Error of .12342 and p-value of .017 which is significant at alpha=.05 over No Formal Education. So, under this sub-category, no other groups of student-respondents supposed to have better ways of assessing the extent of effectiveness of instructional methods used by social science teachers in terms of teaching methods than those students whose parents with College Level of education.

On Learning Conditions: It shows that student-respondent's parents with College Level group obtained the mean difference of -.51974* with Standard Error of .12727 and p-value of .001 which is significant at alpha=.05 over No Formal Education. So, under this sub-category, no other groups of student-respondents supposed to have better ways of assessing the extent of effectiveness of instructional methods used by social science teachers in terms of learning conditions than those students whose parents with College Level of education.

Table 3.4.1 Post Hoc Analysis: Differences in the level of mean in sub-categories Teaching Methods and Learning Conditions when data are grouped according to parent's educational attainment

Dependent Variables	(I) Grouping by Parent's Educational Attainment	(J) Grouping by Parent's Educational Attainment	Mean Difference (I-J)	Std. Error	Sig.
Teaching Methods	No Formal Education	Elementary	-.07392	.05053	.464
		Secondary	-.06725	.09133	.882
		College	-.37281*	.12342	.017
Teaching Methods	No Formal Education	Elementary	.00193	.05211	1.000
		Secondary	-.07182	.09418	.871
		College	-.51974*	.12727	.001

* The mean difference is significant at the 0.05 level.

3.5 According to Parent's Average Monthly Income

Table 3.5 presents the difference in the extent of effectiveness of instructional methods used by the social science teachers at Mindanao State University - Sulu when data are grouped according to their demographic profile in terms of parent's average monthly income. It can be gleaned from this table that both of the sub-categories subsumed under students' assessment of the extent of effectiveness of instructional methods used by social science teachers with their corresponding F-values and probability values are not significant at alpha .05. This means that, student-respondents in this study although vary in their parents' monthly income, still they do not differ in their perceptions toward the extent of effectiveness of instructional methods used by social science teachers. This result implies that a student-respondent whose parents are earning at 16,000 & above may not probably make him/her better perceiver toward the extent of effectiveness of instructional methods than those students whose parents are earning monthly income at 5,000 & below, 6,000 to 10,000; and 10,000 to15,000, or vice versa.

Hence, it is safe to say that variable parent's average monthly income has no significant influence in the ways how student-respondents perceive towards the extent of effectiveness of instructional methods used by social science teachers. Therefore, the hypothesis which states that "There is no significant difference in the extent of the effectiveness of instructional methods used by the social science teachers at Mindanao State University - Sulu when data are grouped according to their demographic profile in terms of parent's average monthly income" is accepted.

Table 3.5 Difference in the extent of effectiveness of instructional methods used by the social science teachers at Mindanao State University - Sulu when data are grouped according to their demographic profile in terms of parent's average monthly income

SOURCES OF VARIATION		Sum of Squares	df	Mean Square	F	Sig.	Description
Teaching Methods	Between	.347	3	.116	2.028	.115	Not Significant
	Within Groups	5.482	96	.057			
	Total	5.830	99				
Learning Conditions	Between	.262	3	.087	1.304	.278	Not Significant
	Within Groups	6.422	96	.067			
	Total	6.684	99				

*Significant at alpha 0.05

4. Is there a significant correlation among the sub-categories subsumed under extent of the effectiveness of instructional methods used by the social science teachers at Mindanao State University - Sulu in terms of teaching methods, and learning conditions?

Table 4 illustrates the correlation between the sub-categories subsumed under extent of the effectiveness of instructional methods used by the social science teachers at Mindanao State University - Sulu in terms of teaching methods, and learning conditions. It can be gleaned from this table that the computed Pearson Correlation Coefficients (Pearson's r) between these variables is significant at alpha .05.

Specifically, the degree of correlation between the sub-categories of subsumed under the extent of effectiveness of instructional methods used by social science teachers in the context of Teaching Methods and Learning Conditions is as follows:

1) Moderate positive correlation between Teaching Methods AND Learning Conditions.

This result indicates that the group student-respondents who generally perceived the extent of effectiveness of instructional methods used by social science teachers at Mindanao State University-Sulu in the context of Teaching Methods as "Preferred" are possibly the same group of student-respondents who perceived Learning Conditions as "Preferred" respectively.

Meanwhile, it is safe to say that, generally the sub-categories subsumed under the extent of effectiveness of instructional methods used by social science teachers at Mindanao State University-Sulu in the context of Teaching Methods and Learning Conditions is moderately correlated.

Therefore, the hypothesis which states that, "There is no significant correlation between the sub-categories subsumed under the extent of effectiveness of instructional

methods at Mindanao State University-Sulu in the context of Teaching Methods and Learning Conditions" is rejected.

Table 4. Correlation between the sub-categories subsumed under the extent of effectiveness of instructional methods at Mindanao State University (MSU) – Sulu in the context of Teaching Methods and Learning Conditions

Variables		Pearson *r*	Sig	N	Description
Dependent	**Independent**				
Teaching Methods	Learning Conditions	.414**	.000	100	Moderate

*Correlation Coefficient is significant at alpha .05
Correlation Coefficient Scales Adopted from Hopkins, Will (2002):
0.0-0.1=Nearly Zero; 0.1-0.30=Low; .3-0.5 0=Moderate; .5-0.7-0=High; .7-0.9= Very High; 0.9-1=Nearly Perfect

Conclusions

This study concludes the following:

1) In this study, students of Mindanao State University–Sulu are sufficiently represented in terms of age, gender, year level, parent's educational attainment, and parent's average monthly income.
2) Generally, the used of instructional methods by social science teachers are preferred by college students across year levels.
3) Profile variables such as year level and parent's educational attainment intervened in ways how students assessed the extent of instructional methods used by social science teachers.
4) Teaching Methods and Learning Conditions are moderately correlated.
5) This study tends to confirm Gestalt Theory, which stresses that learning is a process of acquiring and integrating into one's personality, information, skills, habits and attitudes. Learning takes place when the whole being and the total stimulation are considered. This simply means that the individual does not only act merely to stimulus but rather to the background and setting. A teacher, through his/her instructional methods affects the students' initiatives and enthusiasm. Since instruction should begin at the point of interest of the student, a full knowledge of students preferred instructional methods is required.

Recommendations

This study recommends the following:

1) Administrator/s of Mindanao State University-Sulu should continue to sustain the provision of efficient learning conditions by providing sufficient in-service training programs for social science teachers.
2) Social Science instructors should be provided with more professional trainings that would enhance their pedagogical knowledge and skills in the use of effective instructional methods.
3) More instructors should be encouraged to pursue graduate studies specifically in the field of social science teaching.
4) Moreover, student-researchers in the field of social science teaching are encouraged to conduct study similar to this one but to include other variables such as social science learning strategies, academic achievement, and social science learning anxiety in some other settings.

Compliance with Ethical Standards

The researcher asked the panels of expert to validate the questionnaires first. Then, the researcher asked the permission from the office of the Dean of the Graduate School, Sulu State College, The Mindanao State University-Sulu Chancellor to launch the checklist questionnaires. As soon as the permission was granted, the researcher coordinated the College Dean and launched the questionnaires to the students as respondents. In like manner, the written consent form for both the school heads and students include the statement of confidentiality of data and privacy of the participants. In data gathering, the respondents were given a time to answer the questionnaires and the researcher retrieved the said questionnaires after duly accomplished by the students as respondents. As soon as the questionnaires were collected, the researcher tallied the responses on the SPSS program and further was computed to answer the research questions. I hereby certify that this research work is my own work and to the best of my knowledge, it contains no materials previously published by another person. I also certify that this work does not contain materials which, to a considerable extent, has been accepted in return for an academic degree of Master of Arts in Social Science. I further declare that the content of this research is the product of my own work. Any involvement made in this work by others or elsewhere is clearly acknowledge in the manuscript.

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